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ABSTRACT

Because of a high failure rate in traditional freshman English composition courses, an experiment was conducted at Macomb County Community College (Michigan) to test the hypothesis that more time and careful structuring of lessons could increase the proportion of success in certain categories of students. During 1965-69, 16 instructors and 723 students participated in the experiment. It offered a successful alternative to traditional and remedial courses, as shown by measures of grades, essay ratings, and national achievement tests. The following recommendations supported the project's objectives: (1) development of a composition course for students who are above the remedial level but not yet ready for the usual freshman English; (2) extension of time and careful structuring of composition courses for some students; (3) use of beginning lessons as a practical orientation to college; (4) consideration of male attitudes toward courses; (5) granting partial credit for slower-paced courses; (6) careful selection and scheduling of instructors; and (7) assurance of stability of testing and placement conditions before a long-range experiment is begun. Complete questionnaires and tables are included. (CA)

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FINAL REPORT

Project No. 5-0921
Contract No. OE 6-10-115

AN ENGLISH COMPOSITION SEQUENCE FOR A COMMUNITY COLLEGE

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Stuart D. Morton

MACOMB COUNTY COMMUNITY COLLEGE
WARREN, MICHIGAN

May, 1970

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PREFACE

The research project, "An English Composition Sequence for a Community College," was conducted over a four year period at Macomb County Community College, Warren, Michigan, from 1965 to 1969. The preliminary research involved in preparation for the proposal began in the summer of 1964 with final approval and allocation of funds occurring in August, 1965.

The project involved the development of a sophisticated composition course structure, necessitating a careful selection of students who were not likely to be successful in the traditional freshman composition course. The control of the selection and placement of students in experimental and control classes was generally maintained. However, several important changes occurred during the four year period which complicated the research.

1. The college moved onto a permanent campus just prior to the beginning of the research in 1965. This condition seemed to produce a different student profile from the profile upon which the proposal was based. The college changed from an evening school with students clustered in several age groups to a day school with students, for the most part, just out of high school. However, the change did not alter the research design; as a matter of fact, dealing with bona fide college freshmen (i.e. 18 year olds) perhaps better refined the objectives of the research.

2. The college changed entrance tests from the School and College Ability Test and Cooperative English Test to the American College Testing Program midway through the research. Although equivalencies had been established at the time of the changeover, ACT did not adequately define the type of student that had been defined by the previous tests. The raw scores of ACT which would have maintained the validity of selection of students were not made available. This complicated the treatment of the research data by introducing uncontrollable variables.

3. The original research design stipulated a specific number of instructors for experimental and control classes. However, with the rapid increase in enrollment during the research period (from 5,000 to 13,000), the opening of a second campus (some project instructors transferred there), and the normal attrition of instructors, the originally stipulated number of instructors had to be increased, necessitating the scheduling of some instructors to control classes who had not taught experimental classes.

This condition partially invalidated one objective of the study.

Even with these complications, the experimental objectives were largely achieved and the research produced valuable and encouraging results in English composition curriculum development and in a statistically defined student profile.

Appreciation is expressed to the United States Office of Education which made funds available for this research project, and also to the Board of Trustees and administrators of Macomb County Community College for providing facilities for research. The research could not have been carried out without the fine cooperation of the Admissions Office and the Records Office. Special recognition and appreciation is hereby given Professor Wilhelm Reitz, Chairman of Evaluation and Research Department, and Professor Claire Irwin, of the same Department, Wayne State University, Detroit, for their help and encouragement in designing the approach to the study, and for their constant help with the analysis of the data throughout the project.

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SUMMARY

The experiment described by this report tested the hypothesis that (1) more time and (2) a careful structuring of lessons could increase proportions of success among certain categories of freshman composition students. Measures of grades, essay ratings, and national tests supported the hypothesis.

Description of Problem: A study of freshman composition students at Macomb County Community College was prompted because of the appalling failure rate. In 1964 only about half those entering freshman composition were completing their first semester successfully with grades of C or better. All of the available literature on community college composition expressed the same dismay as that felt at Macomb County Community College.

The Macomb County Community College study revealed that the largest definable block of failures was constituted of those students who had scored between the sixteenth and thirty-fifth percentiles of the Cooperative English Test, Form 1 A. They produced 51 percent of the failures among students taking freshman composition without previous remedial or freshman composition experience. According to the 1964 study, only 41.3 percent of these students were successful. (At the conclusion of the experiment in 1969, the percentage of success for these students was still only 43.2 percent in regular composition classes.)

According to the same study, remedial courses were not profitable for these students. Therefore, a composition course was designed for them. The course would cover the same ground as that covered by freshman composition, but at a slower pace.

Objectives: To measure the new course, the following experimental objectives were established: (1) to discover if extending the first semester of freshman composition to two semesters would reduce dropouts and failures for the experimental range of students. (2) to learn if improved criteria could be discovered to assist placement of students in remedial courses, the extended freshman courses, or regular composition courses. (3) to analyze the effectiveness of experienced instructors, new instructors, and part-time instructors in the extended courses. (4) to determine the effect of structured lessons in the two-semester courses.

Scope of Study: The experiment covered four years, from 1965 to 1969. It involved 723 students and 16 instructors in thirty-eight experimental sections and forty control sections.

Methods: A series of structured lessons was designed for the sequence of experimental courses. The beginning lessons would follow a consistent pattern. (1) A subject would be chosen for its practical

value in orienting the student to college. For instance, the subject might be his college expenses. (2) The pertinent details would be listed. (3) The details would be classified. (4) The classifications would be labelled and formulated into a main idea. (5) An outline would be organized. (6) A paper would be developed from the outline in conjunction with lessons on coherence and mechanics. Each step would lead consistently to the next; and, at each step, the student would be assisted by models to imitate or examples of common errors to avoid. The later lessons would not guide the student so closely, and the subject matter would drift from practical matters to social questions. Nevertheless, the entire sequence would be an elaboration of the pattern of simple analysis.

The lessons would progress in this order: (1) analyses of lists, (2) analyses of written information, (3) paraphrases of articles, (4) comparison and contrast of articles, (5) comparison and contrast of ideas in articles to personal experience, and (6) argumentation, comparing present experience to future possibilities if specific proposals were adopted.

Several sorts of data were gathered to compare the effectiveness of the experimental courses to the effectiveness of freshman composition courses. Background information was gathered from high school transcripts, college application forms, and a personal data questionnaire. Grades were, of course, recorded. Impromptu essays were assigned to experimental and control students at the beginning and at the conclusion of their courses; these essays were rated by instructors who were not involved in the experiment. National achievement tests were administered as part of the placement process; and they were re-administered at the conclusion of regular and experimental courses. For the first two years of the experiment, the tests were the Cooperative English test, Form 1 A and the School and College Ability Test. For the last two years of the experiment, the American College Testing Program was used. In addition to achievement tests, two tests of non-intellectual characteristics were employed. These were the California Test of Personality and the Brown-Holtzman Survey of Study Habits and Attitudes.

Results--Grades: In all comparisons of grades, experimental students achieved higher percentages of success than did control students. Grades were compared at the end of the regular one-semester composition course and at the end of the two-semester experimental sequence. The proportion of successful experimental students was 35.5 percent over the proportion of successful control students. In addition to the 35.5 percent advantage, experimental students achieved a further advantage in the final composition course in which both experimental and control students enrolled. The proportion of successful experimental students was 15 percent higher than the proportion of successful control students.

Comparisons of grades demonstrated even wider advantages for male experimental students. At the end of the first course, the proportion of successful experimental male students was 50.4 percent above the

proportion of successful control students. This advantage was again increased during the final composition course. In that course the proportion of successful male experimental students was 11.74 percent higher than the proportion of successful male control students.

Female experimental students also achieved higher proportions of success than their counterparts. At the end of the experimental sequence, the proportion of success for females was 11 percent higher than the proportion of success for control females at the end of their first semester courses. But the margin widened during the next semester. The experimental females achieved a proportion of success which was 24.48 percent above the proportion of success achieved by control females.

Results--Essay Ratings: Ratings of essays also favored experimental students. Passing experimental students scored statistically significant gains in sixteen out of sixteen scorings of categories summarized by the labels "Organization" and "Ideas." In the same two categories, the control students scored eight significant gains. Only a few inconsistent gains were scored by either group in the third broad category of "mechanics."

Results--National Achievement Tests: Experimental students achieved several more statistically significant gains on national achievement tests than did control students. During the first two years of the experiment, experimental students achieved statistically significant gains on the "Expression," "Speed of Comprehension," and "Vocabulary" sections of the Cooperative English Test, Form 1 A. During the same two years, the control section achieved significant gains in "Vocabulary," but the control group achieved significant gains in "Speed of Comprehension" only during the second year; and it achieved no gains in "Expression."

The School and College Ability test was also administered during the first two years. Gains for the "Verbal" section of the test were significant for both groups, but the experimental gains were twice as great.

The American College Testing Program was adopted by the college during the third and fourth years of the experiment. The experimental group scored a statistically significant gain in the "English" section of the first year of the program, but not during the second year. The control group scored statistically significant gains in the "English" section during both years. This was the only comparison of achievement which did not show an advantage for the experimental group.

Results--Non-Intellectual Measures: According to results of the Brown-Holtzman Survey of Study Habits and Attitudes, persistence was much more closely related to success in experimental classes than in control classes. Among experimental students, responses to the test most often reflected the degrees of success. In control classes, the responses of failing students were often close to the responses of passing students.

The California Test of Personality indicated closely comparable gains for both groups during the four-year experiment. Perhaps the effect of time and experience contributed to the gains in score for both groups.

Results--Correlation Study: A correlation study of the many items of the student's background and his tests revealed some associations. According to the data of some years, as the educational level of the parents increased, the overall academic achievement of the student decreased.

Recommendations: The experience and data of the experiment have produced several recommendations: (1) a composition course for students who are above the remedial level, but who are not ready for the usual pace of the freshman composition course; (2) the extension of the time of composition courses for some kinds of students; (3) the careful structuring of composition courses for some kinds of students; (4) the use of beginning lessons for practical orientation to college; (5) a consideration of male attitudes towards courses; (6) the granting of partial credit for slower paced courses; (7) careful selection and scheduling of instructors; and (8) an assurance of the stability of testing and placement conditions before a long-range experiment is begun.

BACKGROUND TO STUDY

This report describes a four-year experiment in teaching introductory freshman composition. The experimental teaching method was (1) structured and (2) one semester longer than the usual freshman composition sequence.

Results of the experiment indicated that the structured course and the extra time did result in markedly increased success, as measured by grades, ratings of student compositions and national achievement tests. The experiment also produced information about the relationship of attitudes, study habits, and personal background to success.

The significance of the experiment may be clarified by a brief summary of its history. The experiment involved 723 students and sixteen instructors during the period of 1965-1969. It was conducted at Macomb County Community College (South Campus), Warren, Michigan.

Macomb County Community College (M.C.C.C.) served the graduates of over a hundred high schools in a three-county area including Detroit, the northern suburbs of Detroit, and the farming areas of Macomb and Oakland counties. Like many community colleges, M.C.C.C. has experienced remarkable growth. In 1954, the year of its origin as South Macomb Community College, the enrollment was ninety; by 1964, the year before the experiment began, the enrollment was over five thousand; by 1969, the last year of the experiment, the enrollment was over thirteen thousand.

The pressures of expanding enrollment were accompanied by the necessities of teaching students at all levels of ability. Because of the traditional "open door" policy of public community colleges, M.C.C.C. admitted many students who had failed to achieve consistent success in High School classes. The research leading to the proposal for this experiment revealed that in 1964 about thirty-eight percent of those beginning freshman composition (not including remedial composition) had gained less than "C" averages in high school English classes. These students were admitted on the basis of entrance test scores. The scores used to place students had been those registered on the "English Expression" section of the Cooperative English Test, Form 1A. Those students who achieved rankings above the fifteenth percentile in "English Expression" were placed in freshman composition. Those who scored at or below the fifteenth percentile were placed in remedial composition.

This technique of placing students did seem to have some validity. Those students who should have entered remedial composition, and who, instead, entered freshman composition, failed. Those students who scored at or below the fifteenth percentile and who

entered remedial composition, increased their eventual chances of success in freshman composition.

The students who scored in the sixteenth to thirty-fifth percentiles, and who took freshman composition without prior experience, constituted the most compact block of unsuccessful composition students. They produced fifty-one percent of the failures among students taking freshman composition without previous college composition classes. The conclusion might have been drawn, then, that those who scored at or below the thirty-fifth percentile should have been placed in remedial composition. Statistics challenged that conclusion. Those few students, who scored above the fifteenth percentile and somehow entered remedial composition instead of freshman composition, did <u>not</u> profit from remedial work at the rate which would indicate that the experience was worthwhile to their group as a whole.

The situation seemed to call for some technique which would reduce the failure rate among students of freshman composition. Because freshman composition failed too many, and remedial composition did not promise to help the largest group of failures, this study investigated the possibility of a third alternative.

English instructors had the common feeling that the usual first semester composition course covered too much ground for many students. The hypothesis, therefore, was developed that extending the first semester to two semesters would improve chances for success. Because many students seemed to require elaborate explanations and illustrations of composition problems, the additional hypothesis was developed that structuring assignments in a detailed manner would also improve chances for success. The following experimental objectives were established:

1. To discover if the extension of the first semester of freshman English to two semesters would result in the reduction of dropouts or failures for certain categories of students.

2. To learn if, on the basis of intellectual or non-intellectual criteria, clear differentiation can be made or refined to determine (a) those students who could most benefit from an extended freshman English program, (b) those students who could profit most from remedial courses before college level freshman work of any pace, (c) those students who could profit most from conventional English composition courses.

3. To analyze the effect upon the two semester sequence of experienced instructors, new instructors, and part-time instructors.

4. To determine the effect of the structured lessons taught in the two-semester sequence.

The proposal for the experiment was submitted to the Department of Health, Education, and Welfare in March, 1965, and it was approved in August, 1965. The experimental program was begun in September of that year.

METHODS

Program Design

In order to test the hypothesis that structuring lessons in a detailed manner would improve chances for success, several structured lessons were designed. These lessons were intended to lead the students in the experimental classes to the same sort of writing performed by students in regular composition classes, but only after more gradual steps had been traversed.

The experience of the pilot experimental classes resulted in the following design for the first several lessons.

(1) A subject was chosen for its presumed practical value to the student. A lesson might, for instance, be an analysis of the student's college expenses, or an analysis of his study schedule. The practical nature of the assignment was emphasized following the first year of the experiment, when it had seemed apparent that the students had at first been more interested in the practical questions of their education than in the broad social or cultural questions presented by the orthodox freshman composition text.

The practical emphasis of the beginning lessons was later encouraged by such studies as "The Relationship of Personality Factors to Learning in College Composition," by Don Eulert.[1] Eulert concludes that -- at any level of achievement -- those students least likely to succeed are those who expect their lessons to be useful. Because the experimental classes were planned for those less likely to succeed, the structured lessons were designed to take advantage of the students' expectations of useful lessons. The beginning lessons were planned to serve the obvious functions of introducing the student to college.

The functional nature of the lesson was also influenced by the predominantly male enrollment of the classes. The male students seemed especially attracted to lessons with practical associations. This inference seems to have been supported by the extra margin of success achieved by males in experimental sections, as noted in the "Results and Findings" section.

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1. Don Eulert, "The Relationship of Personality Factors to Learning in College Composition," College Composition and Communication XVIII (May 1967), 62-68.

(2) In addition to the practical subject matter of each lesson, the successive steps of each lesson would be made as functional as possible, in that each step would lead to the next specific step, which would eventually lead to a paper. While performing each step, the student would be given models to imitate and examples of errors to avoid. The steps of the assignment would follow this pattern: (a) The student would list the information available to him. (b) He would classify the components of his list. (c) He would label the classifications. (d) He would combine the labels into a main idea. (e) He would develop an outline from his main idea and his classifications. (f) He would develop a paper from the outline. Preparation for writing the paper would include some lessons on mechanics which, if possible, would be associated with the particular mechanical problems of writing the paper.

These steps were devised because the usual instruction to a beginning composition student - to begin with a central idea - seemed inadequate.

Too often a student who tried to begin with a central idea would start with an idea which was unrealistically broad. Or he would start with an idea which he could not support by evidence. Or he would be unable to divide his evidence for discussion, because his central idea implied no divisions. To eliminate such problems, the method used in the experimental classes would be to have the student begin with evidence. Therefore the evidence itself would limit the main idea and would be less likely to generate false starts.

The steps followed in the experimental classes could be most easily illustrated by a description of one of the beginning lessons. The students were given an overall assignment of writing a report upon their direct college expenses. This overall assignment was divided into several intermediate assignments.

(a) The first step of the assignment was to list the direct expenses. To help the students originate their list they were given a model of a list of expenses to imitate.

(b) The next step was to divide the list into categories. For this assignment the task of dividing the list into such categories as tuition, books, and supplies was very easy.

(c) The next step was to label each division, in the manner of "money spent for books" etc..

(d) In the next step, the student would combine the labels into a main idea.

(e) A sample outline would give the student a model to imitate while he combined his main idea and the divisions of his evidence into his own outline.

(f) To understand how to translate his outline into a paper, the student would discuss the problem of connecting ideas. To assist his discussion, he would be given paragraphs of past students who had connected their ideas well or poorly while writing the same paper. In addition, the student would be given a brief lesson on sentence fragments. Again, the examples for discussion would be taken from past papers on college expenses.

The paper on college expenses would be a relatively elementary assignment which would permit the instructor to make many basic points about the process of analysis. More sophisticated and less practical assignments would, of course, follow.

Nevertheless, the basic features of each lesson -- the listing, the classifying and the organizing with the assistance of examples to imitate or to avoid -- would persist throughout most of the two-semester sequence. During the fourth year of the experiment, an article appeared which paralleled some of the thinking which produced the experimental lesson design. "A Behavioral Approach To Writing," by Robert Zoellner in College English, January 1969, made these recommendations among others:

> "What is urgently needed is a pedagogical technique which will supply the student-writer with a set of compositional specifications which are (a) successively intermediate rather than ultimate, (b) visible rather than invisible, (c) uniquely adopted to the student's unique writing problem, and (d) behavioral rather than historical, addressed to writing rather than the written word."[2]

Zoellner's ideas obviously reinforced the ideas which produced the experimental lessons. The pattern of the beginning lesson on costs was extended to more complicated assignments for two semesters. The lists of numbers and items which were classified for early lessons were followed by lists of statements from reports which were classified for later lessons. For instance, the student would identify statements pertinent to his possible vocation in a series of articles. Then he would classify the statements, organize them, and incorporate them into a paper.

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2. Robert Zoellner, "Talk-Write: A Behavioral Pedagogy for Composition," College English, Volume 30, Number 4 (January 1969), 267-320.

Still later, he would classify all the statements in a given article, and reduce the article in a paraphrase.

The next sort of assignment would require him to list and classify comparable and contrastible statements from a pair of articles based upon opinions about social and esthetic matters.

Thereafter, he would list and classify opinions from an article which he could compare and contrast to his own experiences.

Finally, he would list current observations of unsatisfactory conditions to contrast them with hypothetically improved conditions. Below is a diagram of the approximate assignment schedule during the two-semester sequence:

First Semester

Approximately First to Sixth Week

Originating and analyzing lists of items -- such as costs, times, and phrases -- with obvious practical value for the students. Developing reports from the lists.

Approximately Seventh to Fourteenth Week

Noting and analyzing lists of statements from articles with remote practical value for the student. Developing reports from the lists of statements.

Approximately Fifteenth Week to Semester's End

Noting and classifying statements which can be used to paraphrase articles of social interests.

Second Semester

Approximately First to Third Week

Noting comparable and contrastible statements from pairs of articles which review books, movies and plays. Development of comparison and contrast papers.

Approximately Fourth to Ninth Week

Noting comparable and contrastible statements from pairs of articles dealing with controversial social issues. Development of comparison and contrast papers.

Approximately Tenth to Fourteenth Week

Comparisons of statements of articles to first-hand observations. Development of papers on social questions which are based upon first-hand observations.

Approximately Fifteenth Week to Semester's End

Comparisons of current observations to circumstances as they might be if particular proposals were adopted. Development of argumentative papers.

Registration Procedures

The population of the experiment was drawn from those categories of the Cooperative English Test (1965, 1966) and the American College Test (1967, 1968) in which 51 percent of freshman English failures and drop-outs occur. Those categories were the fifteenth through the thirty-fifth percentile rankings on the "English Expression" test of the Cooperative English Test and the "English" test of the American College Test. The percentile range was the prime selection criterion for the research study. The other selection criteria were the limitations of assigning only full-time students with no previous College English composition experience to the Project English classes.

In the fall of 1965, two pilot experimental classes were begun. Control sections were identified in the fall of 1965 and the spring of 1966 and control students were expected to occur within those sections according to random selection. However, other programs of the College also began serving lower-level students in that school year, so a new plan of selection became necessary for the control sections of 1966-67 in order to insure a sufficient number of control students. Fifteen control students were placed in each control section, and the remainder of each control section was filled by ordinary enrollment procedures. This plan was also followed in the last two years of the experiment.

Scheduling Procedures

Several considerations governed the scheduling of experimental and control sections. In order to reduce possible variations due to differences in time, all of the sections were scheduled between 9 a.m. and 2 p.m.

In order to reduce possible variations due to differences in instructors, the original intention had been to have each instructor teach a certain number of experimental students one year, and approximately the same number of control students the next year. This balance was largely maintained. The twelve instructors who taught the experimental classes also taught thirty-one of the thirty-six control

sections. However, as the college enrollment expanded, and as faculty turnover occurred, the balance of instructors could not be perfectly maintained.

In addition to considerations of balance, the scheduling was also influenced by other concerns of the experiment. One concern was whether the structured courses could be conveniently scheduled for part-time instructors. Two part-time instructors taught two control sections during 1966-67, but circumstances revealed that part-time instructors could not easily be integrated into a program which demanded frequent consultation with other instructors and a continuous involvement for at least two years with Project English.

Another concern of the experiment was whether structured courses could be scheduled for new instructors. One instructor taught the experimental sequence as part of his first year's experience. Two other instructors taught the experimental sequence after a year of teaching control courses. Reactions to their experiences varied.

Still another concern of the experiment was whether the first semester of the sequence (English 104) could be begun in the spring and whether the second semester of the sequence (English 105) could be resumed in the fall. This split sequence was tried in the spring and fall of 1968. Results were not encouraging because, over the summer, control of subsequent registration for successful English 104 students could not be maintained.

The schedule of experimental and control sections during the four years is summarized below. All the control sections are first-semester freshman composition classes (English 110). The English 104 sections are the first semester courses of the two-semester experimental sequence; the English 105 sections are the second semester courses of the two-semester sequence.

Schedule of Experimental and Regular (Control) English Courses

TIME	CONTROL		EXPERIMENTAL	
	no. of sections	Type	no. of sections	Type
Fall 1965.....	one	Eng. 110	two	Eng. 104
Spring 1966...	three	Eng. 110	two	Eng. 105
Fall 1966.....	four	Eng. 110	four	Eng. 104
Spring 1967...	six	Eng. 110	four	Eng. 105
Fall 1967.....	eight	Eng. 110	seven	Eng. 104
Spring 1968...	three	Eng. 110	two	Eng. 104
Spring 1968...	. . .	. . . .	six	Eng. 105
Fall 1968.....	ten	Eng. 110	one	Eng. 105
Fall 1968.....	. . .	. . . .	six	Eng. 104
Spring 1969...	three	Eng. 110	four	Eng. 105

Table 1

Data Collection Procedures

The hypotheses and design of the experiment necessitated the collection of several sorts of data.

Since the primary intention of the study was to compare and evaluate the academic success or failure of certain categories of students enrolled in experimental English composition courses and in regular English composition courses, several intellectual and non-intellectual variables had to be measured. These measurements were recorded on a Data Work Sheet. The work sheet served as a cumulative file for each student participating in Project English. It also served as a basis for coding manuals developed for the analysis of the data collected.

Background Information: In order to establish a description of the kind of student involved in Project English and to evaluate the effect of the experimental course on this kind of student, several characteristics were collected from two available sources: Macomb County Community College application form and high school transcripts of grades. Experience and speculation suggested that additional items -- such as car ownership, dating habits, reading habits, parents' level of education, parents' occupation, and the students' current employment -- be collected to supplement records of scholastic performance and test scores. A personal data questionnaire was designed by the investigators to obtain this information. (See Appendix E.) The analysis of data collected described the population in the categories of personal, family, and scholastic characteristics. Contingency tables were developed for age, sex, student employment (hours/week), father's and mother's education, parent's occupation, religious affiliation, student's class rank in high school, high school attended, and grade point averages in high school academic and vocational subjects.

Grades: The single most important measure of success was in terms of grades. Tables were developed of the grades achieved by students who had been involved in the project from fall 1965 to spring 1968. The grades of students during the 1968-69 school year could not be included because they had not yet completed the English 120 course which provided the final comparison of success between experimental and control students.

Pre-Post Essay: Another measurement of success was the rating of student essays written at the beginning and end of the particular course sequence. During the second class meeting of each course, the experimental and control students were given a slip of paper with the following directions:

> Write an impromptu essay on the following subject:
>
> PEOPLE IN MY NEIGHBORHOOD
>
> This paper is to be an analysis of your observations, not a narrative or description.

The same directions were again given to control students, at the last class meeting of their one-semester course and to experimental students at the end of their two-semester sequence.

The subject "People in My Neighborhood," was thought to be familiar enough to provide the student with plenty of detail on short notice. Moreover, it was a subject which could easily lend itself to classification of types of people. On the other hand, if the student had not gained in analytical ability, the subject could easily lead him into undetailed generalities, into mere description, or into an anecdote. Ratings of the essays were made by readers who had been trained to follow a detailed process and who were not involved with the experiment.

Initially two readers were selected from two different colleges in the Detroit area, one from Wayne State University and one from the University of Detroit. Later, because one reader moved out of state and another reader became ill, the team of readers was changed. The next readers re-evaluated the essays previously read by the first readers and continued with the evaluation of unread essays. The final readers were three MCCC instructors who had not been involved in the experiment. For statistical purposes, one reader was designated X. Another reader was designated Y; and he was eventually supplanted by a third reader, also designated Y.

The pairs of readers were coordinated by a "Guidelines for College Essay Evaluation."* Each essay would be read by each of the pair of readers. The readers would not know who had written an essay, whether it had been written in an experimental or control section, or whether it had been written at the beginning or end of a course.

Thirteen qualities, divided into three broad categories, were evaluated: Part I evaluated organization; Part II evaluated content; Part III evaluated mechanics. (See Appendix E.) Each category within each of the divisions was rated on a scale of nine, with nine being the highest possible rating.

The readers were supervised to maintain high reliability performance. Periodically the correlations were checked and were found to vary from .65 to .92.

National Achievement Tests: Originally, the placement of students in experimental and control classes was determined by one score on the Cooperative English Test, Form 1A. The original selection range was between the 15th and 35th percentiles of the "Expression" section of the Cooperative English Test. During the first two years of the experiment the Cooperative English Test was administered as part of placement procedures. In order to provide another measure of success, the test was re-administered to experimental and control groups at the

*Prepared by Dr. W. Reitz and Dr. C. Irwin, May 16, 1966, for Project English.

end of their courses. The control sections completed their work in one semester; the experimental sections completed their work in two semesters.

The Cooperative English Test produced three scores for comparison: "Vocabulary," "Speed of Comprehension," and "Expression."

Accompanying the Cooperative English Test in the first two years of the experiment was the School and College Ability Test (SCAT). SCAT produced three scores which could be used to compare success: "Verbal," "Quantitative," and "Total."

Beginning with the fall semester of 1967, the college changed placement tests to the American College Testing Program (ACT). Therefore, ACT scores replaced the scores of the Cooperative English Test and the School and College Ability Tests as measures of comparison during the last two years of the experiment. The ACT produced five scores: "English," "Mathematics," "Social Studies Reading," "Natural Science Reading," and "Composite."

California Test of Personality: In the process of determining factors that might contribute to the student's lack of success in an English composition course, the California Test of Personality, Form AA and BB, adult level, was selected to measure the level of maturity of the Project population.

Two forms of the California Test of Personality were used in the research study. Form AA was administered within two weeks after the particular composition sequence began in order to measure the basic tendencies of the group to feel, think and act. Form BB was administered at the end of the particular composition sequence for the purpose of determining any changes in these tendencies. The authors of the test state that each item of Form AA is matched with an equivalent item of Form BB as to difficulty, discriminative power, and internal consistency. Thus, the means and standard deviations are identical and the reliability data apply equally to both forms.

The structure of the California Test of Personality was an important factor in the decision to use the test. The yes-no form of response eliminates any answers which would reduce the validity of the test results. The wording of the individual questions controls the attempts of some students to "beat the test."

However, the term "test of personality" often times evokes antagonism from the students being tested. To eliminate some of the "threat" of the test, the research staff explained why the test was being used, emphasized that the results would not become part of the student's MCCC personal file, and assured students that the results would be used only to evaluate the experiment. Further, the students were asked to use a number instead of their names on the answer sheet to preserve their anonymity.

Brown-Holtzman Survey of Study Habits and Attitudes: In order to

label and measure discriminating differences between the experimental and control groups as well as between the academically successful and unsuccessful groups within the experimental and control populations, the Brown-Holtzman Survey of Study Habits and Attitudes 1953 edition, 1956 revision (SSHA) was used.

The SSHA measures characteristics which might contribute to academic success and which were not measured by scholastic aptitude tests. Since the research studied a "high risk" category of students, the inclusion of the SSHA in the test battery was warranted.

The SSHA is a seventy-five item questionnaire. The items are of two kinds: those concerned with the mechanics and conditions of studying, and those pertaining to attitudes toward studying and motivations to do well in school. Since the value of the SSHA depends on the frankness of the answer, considerable explanation to this effect was given to the students answering the survey. The research staff also announced that the results of the test would be made available, at the student's request, to an advisor for interpretation.

The SSHA was administered during the first or second week after the mid-term. By mid-term, students were generally adjusted to the college atmosphere and were more keenly concerned about their abilities as students.

A canvas of the Project instructors' subjective impressions of their students showed a high correlation with the students' responses and scores. From this observation, the researchers concluded that the testing atmosphere was conducive to frank responses on the test.

RESULTS AND FINDINGS

The results and findings from the Project English study established (1) a detailed description of the kinds of students involved in the experiment, (2) a description of the original differences in intellectual and non-intellectual characteristics between the students of the experimental group and the control group, (3) a detailed comparison of the levels of success achieved by the students of both groups, (4) a detailed description of the study habits and attitudes of the students of both groups, (5) a correlation matrix for several characteristics of the students.

Analysis revealed that several mean scores of the control group were originally higher than those of the experimental group. However, according to the final comparisons, the experimental group achieved more significant gains in score.

Student Profile

A general description of the total Project English population is presented in this section. The total Project population consisted of all the students in the experimental and control groups. Specific descriptions of the characteristics of the experimental and control groups are presented, in tabular form, in the appendix (See Appendix A).

Several characteristics were analyzed in order to establish a profile of the students participating in Project English. The analysis also indicated the differences between the experimental and control groups.

Personal Characteristics: The Project population was analyzed in terms of personal characteristics, family background, and scholastic characteristics. Contingency tables provided, in part, a profile of the students' personal characteristics.

The average age of the total group was 18.82 years.

Total Group Distribution by Age (in percent)

AGE	1965-66 Total n=68	1966-67 Total n=109	1967-68 Total n=249	1968-69 Total n=297
17 yrs....	5.9	35.2	22.9	20.5
18 yrs....	44.1	55.6	58.2	58.6
19 yrs....	30.9	3.7	7.6	11.1
20 yrs....	5.9	1.9	2.8	2.0
21 yrs....	4.4	. . .	1.2	2.7
22 yrs....	. . .	0.9	0.4	1.3
23 yrs....	1.5	. . .	0.4	0.7
24 yrs....	1.5	. . .	0.4	0.3
25 yrs....	. . .	. . .	1.6	0.7
30 yrs....	1.5	2.8	2.4	. . .
35 yrs....	4.4	. . .	0.8	0.7
40 yrs....	. . .	. . .	1.2	0.3

Table 2

The Project English population was comprised of 73.2 percent male students and 29.4 percent female students.

Total Group Distribution by Sex (in percent)

SEX	1965-66 Total n=68	1966-67 Total n=109	1967-68 Total n=249	1968-69 Total n=297
Male.....	75.0	75.2	63.5	69.0
Female....	25.0	24.8	36.6	31.0

Table 3

Of the students employed, the average work load was 16.6 hours per week. The students watched television on an average of 6 hours a week and spent 16-20 hours a week studying outside class.

Total Group Distribution by Employment (in percent)

Employment hrs./wk.	1965-66 Total n=68	1966-67 Total n=109	1967-68 Total n=249	1968-69 Total n=297
1-5 hrs...	8.6	4.1	. . .	5.3
6-10 hrs..	22.9	. . .	. . .	4.6
11-15 hrs..	31.4	15.1	. . .	8.6
16-20 hrs..	14.3	27.4	. . .	21.9
21-25 hrs..	5.7	24.7	. . .	26.5
26-30 hrs..	14.3	4.1	. . .	11.3
31-35 hrs..	2.9	15.1	. . .	9.9
36-40 hrs..	. . .	8.2	. . .	6.6
41-45 hrs..	. . .	1.4	. . .	5.3

Table 4

Total Group Distribution by Hours Per Week Spent Watching TV (in percent)

Television hrs./wk.	1965-66 Total n=68	1966-67 Total n=109	1967-68 Total n=249	1968-69 Total n=297
1-5 hrs....	55.0	36.7	. . .	38.2
6-10 hrs...	23.3	38.8	. . .	39.5
11-15 hrs...	11.7	15.3	. . .	14.1
16-20 hrs...	10.0	9.2	. . .	8.2

Table 5

Family Background: Contingency tables developed from data in the category of family background, indicated that 15 percent of the fathers of the students had grade school experience. The fathers who had High School experience comprised 22 percent while 31.9 percent were High School graduates. Of the 31.1 percent who had College experience, 18.5 percent of the fathers had one or two years of College and 12.6 percent were College graduates.

Total Group Distribution by Father's Education (in percent)

Father's Education	1965-66 Total n=68	1966-67 Total n=109	1967-68 Total n=249	1968-69 Total n=297
Grd. Sch. Exp...	10.0	16.3	18.6	15.1
H. S. Exp.....	28.3	13.3	23.8	22.5
H. S. Grad.....	40.0	29.6	27.6	30.7
Coll. Exp.....	11.7	24.5	19.1	18.8
Coll. Grad.....	10.0	16.3	11.0	12.8

Table 6

Of the mothers, 10.7 percent had grade school experience. The mothers who had High School experience comprised 22.4 percent while 47.2 percent were High School graduates. Of the 22.4 percent who had College experience, 16.9 percent of the mothers had one or two years of College and 5.5 percent were College graduates.

Total Group Distribution by Mother's Education (in percent)

Mother's Education	1965-66 Total n=68	1966-67 Total n=109	1967-68 Total n=249	1968-69 Total n=297
Grd. Sch. Exp...	13.1	10.5	13.8	5.5
H. S. Exp.....	27.9	23.2	27.1	22.8
H. S. Grad.....	42.6	48.4	44.8	53.0
Coll. Exp.....	6.6	14.7	10.5	13.7
Coll. Grad.....	9.8	3.2	3.8	5.0

Table 7

The occupation of the parent was also analyzed. The United States Government Directory of Occupation was used for the occupation code.

The "Professional, Technical, Managerial" category accounted for 37.5 percent of the parents' occupations. This category included such diverse occupations as factory foreman and self-employed grocers.

The "Clerical, Sales" category accounted for 13.1 percent of the parents' occupations while 17.3 percent of the parents were employed in the "Machine Trades" category. The "Service Occupation" category accounted for 11.1 percent of the parents' occupations. "Farming, Forestry, Fishery," "Processing," "Bench Work," "Structural," and "Miscellaneous" categories accounted for a very small percentage of the parents' occupations.

Total Group Distribution by Parent's Occupation (in percent)

Parent's Occupation	1965-66 Total n=68	1966-67 Total n=109	1967-68 Total n=249	1968-69 Total n=297
Prof., Tech., Mgr.	31.7	43.0	46.2	39.0
Clerical, Sales	11.7	19.4	4.7	16.5
Serv. occ.	10.0	8.6	13.7	12.0
F.,F.,F.	. . .	. . .	1.0	1.0
Proc. occ.	6.7	1.1	4.7	1.0
Mach. trade	16.7	17.2	18.4	17.0
Bench work	3.3	3.2	0.5	3.0
Struct. work	11.7	7.5	6.8	5.0
Misc.	8.3	. . .	6.8	5.5

Table 8

Scholastic Achievement: Contingency tables developed on data from High School transcript of grade point averages of the Project English students established a scholastic performance profile.

The analysis indicated that 66.9 percent of the students ranked in the upper and lower middle quarter of the High School class. Students who ranked in the bottom quarter comprised 24.1 percent. The remaining students (8.5 percent) ranked in the upper quarter.

Total Group Distribution by Class Rank (in percent)

High School Class Rank	1965-66 Total n=68	1966-67 Total n=109	1967-68 Total n=249	1968-69 Total n=297
Upper qrt.	3.5	6.1	14.0	10.5
Upper middle	36.2	36.7	33.9	30.1
Lower middle	34.5	35.7	31.7	30.6
Lower qrt.	25.9	21.4	20.4	28.7

Table 9

All non-academic courses (i.e. driver's education) were eliminated when calculating the High School grade point averages of the students in the experimental and control groups.

In the Project English population, 72.7 percent of the students achieved academic averages of 2.00-2.50 in High School. High grade point averages in humanities and vocational subjects contributed to the large percent in the 2.00-2.50 range. Many of the students began High School in liberal arts courses and then switched to general business and vocational programs.

Total Group Distribution by Total Grade Point Average- High School (in percent)

Total Grade Point Average	1965-66 n=68	1966-67 n=109	1967-68 n=249	1968-69 n=297
0.50	. . .	. . .	. . .	0.3
1.00	. . .	. . .	2.0	1.0
1.50	13.9	8.5	9.4	13.9
2.00	41.5	34.9	35.5	38.0
2.50	33.9	45.3	34.3	32.2
3.00	9.2	11.3	15.5	11.9
3.50	. . .	. . .	2.0	2.0
4.00	. . .	. . .	1.2	0.7

Table 10

The distribution of grade point averages in various academic subjects occurred as follows: in English/literature, 79.1 percent of the students had grade point averages in the 1.50-2.50 range; in humanities, 17.2 percent of the students had a 2.00 grade point average while 61.0 percent of the students had grade point averages in the

3.00-4.00 range; in social studies, 71.7 percent of the students had grade point averages in the 1.50-2.50 range; in natural science, 74.5 percent of the students had grade point averages in the 1.50-2.50 range; in language, 67.9 percent of the students had grade point averages in the 1.00-2.00 range; in vocational subjects, 72.4 percent of the students had grade point averages in the 2.00-3.00 range.

The evaluation of the effect of Project English on the students participating in the experiment required an analysis of the basic differences between the experimental and control groups.

Comparison of Means (Averages)

An estimation of means for various intellectual and non-intellectual characteristics was made. A comparison of the means of the experimental and control groups by a one-way analysis of variance was conducted each year.

The significant differences that were observed between the experimental and control groups are reported in this section. (In the one-way variance analysis, the F-test was converted to the T-test.)

In 1965-66, the control group had significantly higher means than the experimental group in the following variables: the School and College Ability Test, "Quantitative" score ($SCQP^1$) measured on the entrance test and the "Total" score ($SCTP^1$); the Brown-Holtzman Survey of Study Habits and Attitudes score (SSHAP); the hours per week that the student watched television (TV).

Comparison of Means (average) 1965-66

Vari-able	Experimental			Control			Total			
	m	s	n	m	s	n	m	s	n	t-ratio*
$SCQP^1$	41.89	21.67	44	57.50	29.78	24	47.40	25.74	68	t_{66} 2.4811
$SCTP^1$	38.04	14.97	44	50.54	25.98	24	42.46	20.29	68	t_{66} 2.5219
SSHAP	25.08	21.88	39	38.71	32.90	24	30.27	27.19	63	t_{61} 1.9771
TV	1.55	0.83	38	2.14	1.21	22	1.77	1.01	60	t_{58} 2.2178

Table 11

*all significant at 5 percent

During the 1966-67 year, the control group had significantly higher means than the experimental group in the following variables: the School and College Ability Test, "Total" score ($SCTP^1$) measured on the entrance test; the Cooperative English Test, "English Expression" score (EXP^1) measured on the entrance test; the Brown-Holtzman Survey of Study Habits and Attitudes score (SSHAP); age; High School grade point average in language (LANHS); the hours per week the student was employed (HEMP).

Comparison of Means (average)
1966-67

Variable	Experimental			Control			Total			t-ratio*
	m	s	n	m	s	n	m	s	n	
AGE	17.79	1.10	85	20.08	6.79	24	18.29	3.42	109	t_{107} 3.0103
LANHS	1.61	0.74	57	2.08	0.84	13	1.69	0.78	70	t_{68} 2.0125
SCTP[1]	35.79	13.99	84	44.42	21.41	24	37.70	16.23	108	t_{106} 2.3454
EXP[1]	23.07	5.33	85	27.25	5.42	24	23.99	5.60	109	t_{107} 3.3777
SSHAP	31.30	25.55	74	45.00	24.54	24	34.65	25.87	98	t_{96} 2.3043
HEMP	4.68	1.71	57	5.69	1.85	16	4.90	1.78	73	t_{71} 2.0343

Table 12

*All significant at 5 percent

No significant differences in means were observed between the groups during the 1967-68 school year.

In the 1968-69 school year, the control group had significantly higher means than the experimental group for the following variables: the American College Test, "English" score (ACTE[1], ACTE[2]) measured on the entrance and the post tests. The experimental group had significantly higher means than the control group on the following variables: the California Test of Personality, "Personal Adjustment" (CBPP[2]) score measured on the post test, the "Social Adjustment" score (CASP[1], CBSP[2]) and the "Total" score (CATP[1], CBTP[2]) measured on the pre and the post tests.

Comparison of Means (averages)
1968-69

Variable	Experimental			Control			Total			t-ratio*
	m	s	n	m	s	n	m	s	n	
ACTE[1]	24.88	6.27	165	27.09	7.20	130	25.86	6.77	295	t_{293} 2.8114
ACTE[2]	26.58	16.48	85	33.69	19.16	81	30.05	18.14	166	t_{164} 2.5689
CBPP[2]	53.41	30.38	85	43.59	27.54	81	48.62	29.36	166	t_{164} 2.1784
CASP[1]	39.24	25.65	152	32.95	22.30	120	36.46	24.39	272	t_{270} 2.1245
CBSP[2]	56.16	28.95	85	43.57	26.20	81	50.02	28.28	166	t_{164} 2.9344
CATP[1]	40.26	25.94	152	33.68	23.14	120	37.35	24.92	272	t_{270} 2.1779
CBTP[2]	55.98	26.87	84	43.48	25.59	81	49.84	26.91	165	t_{163} 3.0569

Table 13

*All significant at 5 percent

Most of the significant differences in the original mean scores were in favor of the control group. However, most of the significant gains were made by the experimental group.

Measures of Success: Grades

The most significant comparison of experimental and control groups was made in terms of grades. Grades of control students were collected at the end of their one-semester course (English 110); and grades were collected at the end of the two-semester experimental sequence (English 104 and 105). Grades were also collected at the end of the next composition course for each group (English 120). Comparisons markedly favored the experimental group.

Grades of the Experimental Course Compared To Grades of the First-Semester Freshman Course

Approximately 59 percent of the experimental group was successful in the two-semester experimental composition course. In the regular one-semester composition course, only 43 percent of the control group was successful. The table below compares the success of each group.

Academic Performance: Experimental and Control Course (in percent)

Group	Passed	D	Failed	Dropped	Incomplete
Total Experimental n=256	58.59	10.16	11.33	19.14	. . .
Total Control n=340	43.24	25.59	16.18	14.12	0.88

Table 14

As the table demonstrates the experimental group achieved a percentage approximately 15 points higher than did the control group. When the control group's percentage of success is used as a base, the 15 point difference represents a 35.5 percent greater margin of success for the experimental group.

Sex and Success

The success levels become still more significant when they are considered in terms of the relationship of sex to success.

The percentage of successful female students was about 17 points higher in the control group than the percentage of successful male students. But in the experimental group the success percentage of females was only 5 points higher than that of the males.

Even more important is a comparison between the experimental and control groups. The success percentage of females in the experimental group was only a little more than 6 points higher than the success percentage of females in the control group. But the success percen-

tage of males in the experimental group was 19 points higher than the success percentage of males in the control sections.

When the control group's percentage of success is used as a base, the 19 point difference represents a 50.4 percent greater margin of success for the male students in the experimental group.

Academic Performance: Sex vs. Success (in percent)

Course	Passed				D Grade				Failed (E)			
	Male	n	Female	n	Male	n	Female	n	Male	n	Female	n
Experimental English n=256	56.79	92	61.70	58	11.11	18	8.51	8	10.49	17	12.77	12
Regular English n=340	37.77	88	55.14	59	26.18	61	24.30	26	17.60	41	9.34	10

Table 15

Course	Dropped				Incomplete			
	Male	n	Female	n	Male	n	Female	n
Experimental English n=256	21.61	35	13.83	13	-	-	3.19	3
Regular English n=340	18.00	42	9.33	10	0.43	1	1.89	2

Table 15 (continued)

The table also makes some points about failures. Among the males in the experimental sections, there were 57.6 percent fewer non-transferrable D's and 40.4 percent fewer E's than among the males in the control sections. Among the females in the experimental sections, there were 65 percent fewer D's than among females of the control sections. There were 20 percent more E's among experimental females than among control group females, but the numbers upon which the percentage could be based were small.

The percentage of both male and female experimental students who dropped was a few points higher than the percentage of drops for their

counterparts in control sections. But this difference could not be regarded as crucial. The experimental drops occurred over two semesters so they could be expected to surpass the percentage of drops in the one-semester control course.

Success Rates of the Final Semesters of Freshman Composition (English 120)

Another important comparison between the experimental group and the control group can be made in terms of the subsequent composition course. The course, English 120, would ordinarily be the second-semester course, as it was for the control students. The same course would comprise the third semester of composition for the students. The records studied include those of 127 experimental students who enrolled in English 120, and of 139 control students who enrolled in English 120. Of the control group, 56.83 percent was successful in English 120. And 65.4 percent of the experimental group was successful in the same course.

Academic Performance in English 120 (in percent)

Group	Passed	n	D grade	n	Failed	n	Dropped	n
Successful Experimental n=127	65.35	83	18.11	23	3.15	4	13.39	17
Successful Control n=139	56.83	79	17.99	25	5.76	8	19.42	27

Table 16

Therefore, 14.99 percent more experimental students passed the last semester of freshman composition than did control students. The 14.99 percent advantage was, of course, an increment to the 35.5 percent of success achieved by the experimental sequence of classes over the introductory composition classes.

Sex and Success in English 120

Comparisons by sex are again important when considering success rates in English 120.

Sex vs. Success in English 120 (in percent)

Group	Passed				D grade				Failed				Dropped			
	Male	n	Female	n	Male	n	Female	n	Male	n	Female	n	Male	n	Female	n
Experimental n=127	59.77	56	77.50	32	16.09	18	7.50	5	3.45	3	2.50	1	20.69	14	12.50	3
Control n=139	53.49	46	62.26	33	18.60	18	20.75	7	6.98	6	3.77	2	20.93	16	13.21	11

Table 17

The experimental females had a higher rate of success--about 17.73 points higher than did the experimental males. Thus the difference in percentages of success between experimental females and males increased in English 120. In the experimental sequence the females had only a 5 point advantage.

However, the differences in success percentages between male and female control students were broad in both semesters. In the first semester the control females achieved a success percentage 17 points higher than the males. In English 120 the control females achieved a success percentage about 20 points higher than the males.

Moreover, the success percentage of experimental males in English 120 was 6 points higher than the success percentage of control males in English 120. When the control group's percentage of success is used as a base, the 6 point difference represents an 11.74 percent greater margin of success for the males in the experimental group. This 11.74 percent margin follows the first 50.4 percent margin of success achieved by the males in the experimental sequence over males in English 110 control sections.

In English 120, female experimental students had a success percentage 16 points higher than female control students. When the control group's percentage of success is used as a base, the 16 point difference represents a 24.48 percent greater margin of success for the females in the experimental group. This 24.48 percent margin follows the 11.90 percent margin of success achieved by the females in the experiemental sequence over females in English 110 control sections.

Therefore, the experimental classes resulted in the greatest increase in sucess percentages for males, though in all cases the

success percentages of females were higher than those of males.

Repeats and Success

The influence of time alone does not seem to be the entire explanation for the comparative success of experimental students. The experimental students do have an extra semester of composition, completing their freshman composition requirements in three semesters. But control students who fail English 110 or 120 and who repeat the course also have the advantage of extra time and experience. The success level of such repeaters was a very low 18 percent. This percentage is based upon a total of thirty-two control students who recycled either English 110 or 120. The small number of repeaters suggests the discouraging effect of failure.

Measures of Success: Pre-Post Essays

A second important measurement of success was the rating of pre and post essays by readers who had not taught experimental or control classes. The readers rated the papers in thirteen categories which were divided according to the headings "Organization," "Ideas" and "Mechanics." Each of the categories was judged according to a nine-point scale, with nine being the highest rating. The tables below summarize the statistically significant gains in ratings from the first essays to the second for passing students. For the sake of statistical convenience, one reader has been designated as "Reader X." Another reader, and the reader who replaced him, comprise "Reader Y." Asterisks indicate statistically significant gains.

Passing Students "Introduction" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	3.03	4.19 *	3.77	4.87 *
Control	4.26	4.90 *	4.89	5.44

Table 18

Passing Students "Paragraphs" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	4.40	5.02 *	4.14	4.61 *
Control	4.96	5.04	4.22	5.20 *

Table 19

*Indicates statistically significant gain.

Passing Students "Supporting Detail" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	3.81	4.51 *	3.82	4.50 *
Control	5.05	4.95	4.38	4.82 *

Table 20

Passing Students "Unity" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	3.39	4.19 *	3.79	4.59 *
Control	4.41	4.48	4.09	4.70 *

Table 21

Passing Students "Coherence" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	2.93	3.67 *	3.60	4.46 *
Control	4.01	3.94	4.15	4.65

Table 22

*Indicates statistically significant gain.

Passing Students "Conclusion" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	2.38	3.54 *	3.32	4.52 *
Control	3.09	3.99 *	3.54	4.71 *

Table 23

Passing Students "Analytical Approach" ("Ideas") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	3.93	4.46 *	3.42	4.24 *
Control	4.60	4.50	3.78	4.49

Table 24

Passing Students "Maturity of Ideas" ("Ideas") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	3.48	3.94 *	3.89	4.58 *
Control	4.31	4.19	4.14	4.68

Table 25

*Indicates statistically significant gain.

Passing Students "Sentence Sense" ("Mechanics") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	5.27	5.48	4.95	5.99 *
Control	6.25	5.71	4.30	5.48 *

Table 26

Passing Students "Grammar and Syntax" ("Mechanics") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	5.20	5.25	4.82	4.65
Control	5.56	6.08 *	4.76	5.46 *

Table 27

*Indicates statistically significant gain.

The tables which present the gains of passing students make a number of points obvious: the control students were almost always given initially higher ratings. The control group's final ratings were also higher in almost every case--but the differences between the experimental and control groups had been reduced.

The experimental group gained significantly in every scoring of the "Organization" and "Ideas" sections of the scale. That is, the experimental passing group gained significantly in sixteen out of sixteen scorings in those two sections. In the same two sections, the control group scored eight statistically significant gains. Six of these gains were indicated by the Y readers. But neither X or Y registered a significant gain for the passing control students for "Coherence."

No significant gains for either group were recorded for "Grammar" or "Spelling."

D Student Gains

The experimental D students achieved several less significant gains in score than did the passing experimental student. In the "Organization" section and the "Ideas" section, the experimental

group achieved nine statistically significant gains out of sixteen ratings. In the same categories, the control group achieved five statistically significant gains.

In the majority of ratings, the control D students produced means which were originally higher than the means of the experimental students. However, the differences between the groups narrowed in the final ratings.

Neither the experimental nor the control groups scored any significant gains in "Idiom" or "Grammar and Syntax." And they resembled both passing and failing students in their lack of any significant gains in "Grammar" or "Spelling."

Perhaps the most notable failure of experimental students to gain was in the area of "Coherence." The control D students did achieve one significant gain "Coherence"; but this gain was the only one recorded, with the exception of those two "Coherence" gains indicated for the experimental "passing" group. Below are a series of tables summarizing the gains. An asterisk (*) indicated the statistically significant gains in score:

D Students "Introduction" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	2.95	4.19 *	4.14	4.71
Control	3.95	4.60	4.82	4.98

Table 28

D Students "Paragraphs" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	4.14	4.90	3.48	5.00 *
Control	4.22	5.40 *	3.85	4.90 *

Table 29

D Students "Supporting Details" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	3.38	4.29 *	3.71	4.33
Control	4.98	5.08	3.78	4.45

Table 30

D Students "Unity" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	2.90	3.90 *	3.62	4.71 *
Control	3.72	4.22	3.55	4.35 *

Table 31

D Students "Coherence" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	2.81	3.38	3.52	4.29
Control	3.18	4.00 *	3.70	4.40

Table 32

D Students "Conclusion" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	2.19	3.38 *	3.57	4.33
Control	2.58	3.98 *	3.30	4.08

Table 33

D Students "Analytical Approach" ("Ideas") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	3.52	4.29 *	3.29	4.33 *
Control	4.08	4.32	3.62	3.98

Table 34

D Students "Maturity of Ideas" ("Ideas") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	3.05	3.62 *	3.67	4.14
Control	3.85	3.95	3.85	4.15

Table 35

D Students "Sentence Sense" ("Mechanics") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	4.48	5.24	4.76	4.86
Control	6.40	5.38	3.95	4.88

Table 36

Failing Students

The greatest differences in the experimental and control students occurred between the failing students of each group. No statistically significant gains were achieved by the failing students of the control group. The failing experimental students achieved several statistically significant gains; but--unlike the passing students--they achieved no gains in "Coherence." Below are tables summarizing significant gains: Asterisks (*) mark significant gains.

Failing Students "Paragraphs" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	4.86	5.71	3.57	5.86 *
Control	6.50	5.60	5.60	5.10

Table 37

Failing Students "Conclusion" ("Organization") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	1.86	3.00	2.43	4.71 *
Control	3.20	3.90	5.00	4.80

Table 38

Failing Students "Maturity of Ideas" ("Ideas") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	3.29	3.86	3.00	5.00 *
Control	4.10	3.90	4.00	4.40

Table 39

Failing Students "Sentence Sense" ("Mechanics") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	4.43	6.14 *	5.14	6.00
Control	6.70	5.60	4.80	5.60

Table 40

Failing Students "Idiom" ("Mechanics") Gain

Group	X		Y	
	Pre m	Post m	Pre m	Post m
Experimental	4.00	5.29 *	2.86	4.43
Control	4.90	5.40	5.10	4.40

Table 41

One of the most striking things about the ratings for failing students is that they are so consistently high both for first and second papers, and for both experimental and control.

Failing experimental students had the highest ratings of either X or Y for both first and second papers in scorings of "Paragraphs," "Supporting Details," "Unity," "Coherence," "Syntax," "Grammar," and "Spelling." In addition, failing experimental students had the highest ratings of either X or Y for the second papers in scoring on "Conclusion," "Analytical Approach," "Maturity of Ideas," and "Idiom." Not all of these high ratings resulted in statistically significant gains, of course.

Failing control students had the highest ratings of either X or Y for <u>first and second</u> papers in scorings of "Paragraphs," "Conclusions," "Grammar and Syntax," and "Spelling." Additionally, failing control students had the highest ratings of either X or Y for scorings of <u>first</u> papers in "Introductions," "Supporting Details," "Unity," "Coherence" and "Analytical Approach." Finally, in one scoring of second papers, "Grammar," failing control students were highest. However no statistically significant gains for failing control students were recorded.

The analyses suggest that, in the case of the failing students, failures could not be attributed to incapacity but to erratic performance. Those who failed must have been those who did not complete

their work. In the case of experimental failing students, they would have to have been among those who attended class throughout the two semesters without dropping. If they had persisted in work of low quality, they probably would have been given D's, which could not have been transferred to a university and which would have obliged them to repeat freshman composition. The experimental D students, as a rule, were those whose first and second papers were rated the lowest. On the other hand, if the failing students had been bored or exasperated with the experimental classes, they had every opportunity to drop during the two semesters without incurring an E grade. So failing students were those who had the capacity to succeed, and had the opportunity to drop, and who--nevertheless--attended classes through one or two semesters without completing course requirements.

Perhaps the importance of the failing students' scores should not be exaggerated. Very few of the experimental or control students received E's. Only 17 students or 6.3 percent failed.

Comparing Passing, D, and Failing Students

Another way of looking at the relative rates of success would be to compare the mean scores of passing, D, and failing students. The tables below summarize the comparisons. Asterisks (*) indicate significant gains.

Organization

Gains in "Introduction"

Group	Experimental				Control			
	X		Y		X		Y	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	m	m	m	m	m	m	m	m
Passing	3.03	4.19*	3.77	4.87*	4.26	4.90*	4.89	5.44
D	2.95	4.19*	4.14	4.71	3.95	4.60	4.83	4.98
Failing	3.00	3.57	2.57	4.29	4.40	4.50	6.30	4.80

Table 42

Gains in "Paragraphs"

Group	Experimental				Control			
	X		Y		X		Y	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	m	m	m	m	m	m	m	m
Passing	4.40	5.01*	4.14	4.61*	4.96	5.04	4.23	5.20*
D	4.14	4.90	3.48	5.00*	4.23	5.40*	3.83	4.90*
Failing	4.86	5.71	3.57	4.86*	6.50	5.60	5.60	5.10

Table 43

Gains in "Supporting Details"

Group	Experimental				Control			
	X		Y		X		Y	
	Pre m	Post m	Pre m	Post m	Pre m	Post m	Pre m	Post m
Passing	3.81	4.51*	3.82	4.50*	5.05	4.95	4.38	4.83*
D	3.38	4.28*	3.71	4.33	4.98	5.08	3.78	4.45
Failing	4.29	4.86	3.57	5.14	5.90	5.00	4.90	4.50

Table 44

Gains in "Unity"

Group	Experimental				Control			
	X		Y		X		Y	
	Pre m	Post m	Pre m	Post m	Pre m	Post m	Pre m	Post m
Passing	3.39	4.19*	3.79	4.59*	4.41	4.46	4.09	4.70*
D	2.90	3.90*	3.62	4.71*	3.73	4.23	3.55	4.35*
Failing	3.71	4.29	3.71	5.00	5.30	4.20	4.90	4.40

Table 45

Gains in "Coherence"

Group	Experimental				Control			
	X		Y		X		Y	
	Pre m	Post m	Pre m	Post m	Pre m	Post m	Pre m	Post m
Passing	2.93	3.67*	3.60	4.46*	4.01	3.94	4.15	4.65
D	2.81	3.38	3.52	4.29	3.18	4.00*	3.70	4.40
Failing	3.29	3.86	3.14	4.71	4.70	3.90	4.80	4.40

Table 46

Gains in "Conclusion"

Group	Experimental				Control			
	X		Y		X		Y	
	Pre m	Post m	Pre m	Post m	Pre m	Post m	Pre m	Post m
Passing	2.38	3.54*	3.32	4.52*	3.09	3.99*	3.54	4.70*
D	2.19	3.38*	3.57	4.33	2.58	3.98*	3.30	4.08
Failing	1.86	3.00	2.42	4.71*	3.20	3.90	5.00	4.80

Table 47

Ideas

Gains in "Analytical Approach"

Group	Experimental				Control			
	X		Y		X		Y	
	Pre m	Post m	Pre m	Post m	Pre m	Post m	Pre m	Post m
Passing	3.93	4.46*	3.42	4.24*	4.60	4.50	3.76	4.49*
D	3.52	4.29*	3.29	4.33*	4.08	4.33	3.63	3.98
Failing	3.86	4.43	3.00	4.57*	4.60	4.40	4.20	4.10

Table 48

Gains in "Maturity of Ideas"

Group	Experimental				Control			
	X		Y		X		Y	
	Pre m	Post m	Pre m	Post m	Pre m	Post m	Pre m	Post m
Passing	3.48	3.94*	3.89	4.58*	4.31	4.19	4.14	4.68*
D	3.04	3.62*	3.67	4.14	3.85	3.95	3.85	4.15
Failing	3.29	3.86	3.00	5.00*	4.10	3.90	4.00	4.40

Table 49

Mechanics

The only category of "Mechanics" in which both groups achieved any significant gains was in "Sentence Sense."

Gains in "Sentence Sense"

Group	Experimental				Control			
	X		Y		X		Y	
	Pre m	Post m	Pre m	Post m	Pre m	Post m	Pre m	Post m
Passing	5.27	5.48	4.95	5.99*	6.25	5.71	4.30	5.48*
D	4.48	5.24	4.76	4.86	6.40	5.38	3.95	4.88
Failing	4.43	6.14*	5.14	6.00	6.70	5.60	4.80	5.60

Table 50

One other statistically significant gain was made by the failing experimental students in "Idiom." And one other statistically significant gain was made by the passing control students in "Grammar and Syntax." No categories of either experimental or control students scored any statistically significant gains in either "Grammar" or "Spelling." But neither of these categories seemed to be areas of particular difficulty. Nearly all of the means for "Grammar" were above 5.0. And most of the means for "Spelling" were 6.0 or above.

Measures of Success: Pre-Post Achievement Tests

Cooperative English Test; School and College Ability Test

Originally the experimental range was determined by one score on the Cooperative English Test, Form 1A. The original selection range was between the 15th and 35th percentiles of the "Expression" section of the Cooperative English Test. During the first two years of the experiment, the Cooperative English Test was administered as part of placement procedures. To provide comparisons, the test was re-administered to experimental and control groups at the end of their sequence: to repeat, the control sections had one-semester courses; and the experimental group had two-semester courses.

During the two years in which the Cooperative English Test was administered, the experimental group gained significantly in most categories, particularly in the "Expression" category. During those same two years, the control group did not achieve statistically significant gains in the "Expression" score, even though the control group had achieved a significantly higher mean on the pre test in 1966-67. The table below indicates gains in the mean percentiles of the "Expression" score for each group.

Gains in "Expression" score of Cooperative English Test

GROUP	65-66		65-66	
	Pre	Post	Pre	Post
	m	m	m	m
Experimental	27.19	37.23*	23.51	35.37*
Control	27.63	32.68	27.25	32.17

Table 51

*Statistically significant gain

During the two years the experimental group also achieved statistically significant gains in the other categories of the Cooperative English Test: "Vocabulary" and "Speed of Comprehension." In 1965-66 the control group achieved a statistically significant gain only in "Vocabulary"; in 1966-67 the control group achieved gains in both categories. Here is a table summarizing gains for both groups:

Gains in "Vocabulary" *

GROUP	65-66		65-66	
	Pre	Post	Pre	Post
	m	m	m	m
Experimental	42.00	48.74	38.65	46.46
Control	42.53	51.84	34.75	45.88

Table 52

*All gains are statistically significant.

Gains in "Speed of Comprehension"

GROUP	65-66		66-67	
	Pre	Post	Pre	Post
	m	m	m	m
Experimental	39.92	50.26*	42.21	48.75*
Control	44.79	50.26	38.50	51.58*

Table 53

*Statistically significant gains.

Accompanying the Cooperative English Test in the first two years of the experiment was the School and College Ability Test (SCAT). SCAT produced three scores: "Verbal," "Quantitative," and "Total." The experimental group achieved significant gains in all three categories during the first year of the experiment; and the experimental group also achieved significant gains in the "Verbal" and "Total" categories in the second year. The control group achieved a statistically significant gain in the "Verbal" category during the first year; during the second year it achieved statistically significant gains in the "Verbal" and "Total" categories. Table 54 summarizes SCAT results:

SCAT "Verbal" Gains

GROUP	65-66		66-67	
	Pre	Post	Pre	Post
	m	m	m	m
Experimental	41.64	53.61	38.71	49.68
Control	45.83	52.67	44.50	50.41

Table 54

The gains in percentile rankings for the experimental group in the "Verbal" category are almost twice as great as those for the control group; but all the gains for both groups are statistically significant.

On the other hand the gains, or lack of gains, for the "Quantitative" category are summarized by the table below:

SCAT "Quantitative" Gains

GROUP	65-66		66-67	
	Pre	Post	Pre	Post
	m	m	m	m
Experimental	43.00	48.50*	41.68	44.54
Control	57.50	59.17	52.04	53.95

Table 55

*Statistically significant gain.

Below is a table summarizing gains for each group in the "Total" category:

SCAT "Total" Gains

GROUP	65-66		66-67	
	Pre	Post	Pre	Post
	m	m	m	m
Experimental	39.89	50.70*	36.02	43.93*
Control	50.54	55.21	45.04	51.04*

Table 56

*Statistically significant gains.

American College Testing Program Scores

Beginning with the fall semester of 1967, the college changed placement tests to the American College Testing Program (ACT). This change seemed to have confused the experiment in some respects. Although equivalencies were supposed to have been established between the Cooperative English Test "Expression" score and the ACT "English" score, the ACT score seemed to select a different type of student. Moreover it seemed to test different sorts of achievement. The differences may be, in part, explained by the different designs of the tests. The Cooperative English "Expression" section consisted of two parts. Part I was "Effectiveness" which required the student to choose from lists of words the ones which would most "suitably" complete sentences. Part II was "Mechanics," which required the student to identify the parts of sentences which were mechanically defective. No counterpart to the "Mechanics" section was presented by ACT. The "English Usage" section of ACT required the student to decide if words within sentences should be replaced by better choices from lists of alternatives.

An additional point about the ACT test is that it is revised yearly and therefore changes its norms with each revision. Unavailability of the pre-test raw scores prevented the elimination of variances which might have occurred in the revisions. In 1968-69, the revised ACT was not used, but variances from past experience still seemed to occur.

The ACT Test produces five scores: "English," "Mathematics," "Social Studies Reading," "Natural Science Reading," and "Composite." During 1967-68 the experimental group scored significant gains in "English" and "Natural Science Reading." In the same year, the control group scored significant gains in "English" and "Social Studies Reading."

In 1968-69, the experimental group scored a significant gain only in "Social Studies Reading"; but the control group scored significant gains in "English," "Mathematics," and "Composite." Below is a table summarizing the "English" gains for the two years:

ACT "English" Gains

GROUP	67-68		68-69	
	Pre	Post	Pre	Post
	m	m	m	m
Experimental	25.91	32.28*	26.17	26.74
Control	27.84	35.27*	27.92	33.69*

Table 57

*Statistically significant.

The 1968-69 ACT "English" testing produced the only "Verbal" score on which the experimental group failed to register a significant gain, while the control group did register a significant gain.

Measures of Changes In Maturity: California Test of Personality

The California Test of Personality did not reveal consistent differences in gains between the experimental and control groups. The first administration of the test occurred in the first two weeks of the experimental and control courses. The second administration of the test occurred in the last two weeks of the one-semester control course, and in the last two weeks of the two-semester experimental course.

Each group registered gains of from eight to thirteen percentiles for the categories of "Personal Worth," "Social Adjustment," and "Total Adjustment," with one exception during the four years. The one exception was a gain of twenty-two percentiles by the experimental group during 66-67, in the categories of "Personal Worth." During the same year the control group gained thirteen percentiles in the same category. These gains--twenty-two percentiles and thirteen percentiles--were the most disparate of any recorded. Other gains were consistently within five percentiles of each other.

Both groups, then, scored closely comparable gains in the "Sense of Personal Worth" during the four-year program. The California Test of Personality manual defines "Sense of Personal Worth" in this way:

> An individual possesses a sense of being worthy when he feels he is well regarded by others, when he feels that others have faith in his future success, and when he believes he has average or better than average ability. To feel worthy means to feel capable and reasonably attractive.

Gains in the Means For "Sense of Personal Worth"

Group	65-66		66-67		67-68		68-69	
	Pre m	Post m	Pre m	Post m	Pre m	Post m	Pre m	Post m
Experimental	60.18	74.14	46.07	68.12	55.50	64.96	60.06	70.45
Control	53.83	72.08	57.26	70.26	56.29	72.13	50.47	62.31

Table 58

A consistent gain for "Social Adjustment" is also recorded for both groups for the four years. "Social Adjustment" is a composite score which includes scores in these categories: "Social Standards," "Social Skills," "Anti-Social Tendencies," "Family Relations," "School Relations," "Occupational Relations," and "Community Relations."

Gains In "Social Adjustment"

Group	65-66		66-67		67-68		68-69	
	Pre m	Post m	Pre m	Post m	Pre m	Post m	Pre m	Post m
Experimental	47.14	57.68	43.16	56.49	43.70	56.44	40.39	55.47
Control	48.96	59.38	46.52	62.83	45.69	57.30	33.30	43.57

Table 59

Scores for "Total Adjustment" also consistently increased. "Total Adjustment" is a composite of all the scores in "Personal Adjustment" and "Social Adjustment."

Gains In "Total Adjustment"

Group	65-66		66-67		67-68		68-69	
	Pre m	Post m	Pre m	Post m	Pre m	Post m	Pre m	Post m
Experimental	44.55	54.21	42.19	55.00	44.42	52.60	42.22	55.27
Control	48.25	56.79	47.17	61.65	43.51	52.78	33.94	43.48

Table 60

Less regular gains for "Personal Adjustment" were recorded during the four years. "Personal Adjustment" is another composite score which records overall gains in these categories: "Self-reliance," "Sense of Personal Worth," "Sense of Personal Freedom," "Feelings of Belonging," "Withdrawing Tendencies," and "Nervous Symptoms." Here is a table of the significant gains recorded during the experiment:

Gains in "Personal Adjustment"

Group	66-67		67-68		68-69	
	Pre m	Post m	Pre m	Post m	Pre m	Post m
Experimental	42.12	53.74	. . .	. . .	42.86	52.77
Control	46.57	59.09	42.31	49.06	36.20	43.59

Table 61

The only other statistically significant gains were those scored by the experimental group during 67-68 in the area of "Feelings of Belonging" (39.81-45.37); and by the control group during 68-69 in the area of "Self Reliance" (41.06-47.26).

Thus most of the gains indicated by the two groups on the California Test of Personality are overall gains which are closely comparable. Possibly the gains are attributable merely to maturation factors such as college experience, employment, and time. If so, extending the duration of the students' first college experiences may give them the advantages of bringing some extra maturity to those experiences before they end. This extra maturity may be particularly important to the category of students included by the experiment. None of the experimental or control group began with a "Total Adjustment" percentile of higher than 48.25 (the score of the control group for 1965-66). And the "Total Adjustment" percentile sank as low as 33.94 (for the control group of 68-69). Mean percentiles suggest, therefore, that added maturity seems especially important to students like those selected for experimental and control classes.

Item Analysis on Counseling Keys
of the
Brown-Holtzman Survey of Study Habits and Attitudes

One part of the investigation has been an item analysis of the responses to the Brown-Holtzman Survey of Study Habits and Attitudes. The item analysis has been made to determine discriminating differences between sub-groups of the project population.

The survey was administered midway during the first semesters of the experimental and control sections. The results of 319 tests were available for this report.[1]

After students had completed their experimental or control classes, they were divided into four categories:

Passed
D - grade
Failed
Dropped

These categories have been used in the analysis of the students' responses to the survey.

To further assist the analysis, different kinds of items within the survey were provided with labels.[2] To serve the purposes of this experiment, the labels have been derived from a consensus of four experienced instructors, not teaching experimental or control sections. They agreed upon the use of these terms:

Academic Attitudes
Personal Attitudes
Study Habits
Ability

Because some items of the survey seem to be involved with more than one concept, some of the items have been labelled in more than one way.

The items which have been judged to be relevant to this analysis

1. The number is low because results of the '68-'69 testing could not be included in the computer run of January '69. The success rates of that year had not yet been established because students had not completed their classes.

2. Labels were applied to types of items within the 1953 edition of the Brown-Holtzman Survey of Study Habits and Attitudes. A later edition supplied its own classification. But this later edition could not be utilized because the experiment began with the 1953 edition.

are twenty-one statements which appear on both the male and female counseling keys. These are the items which can be used to make discriminations within the total group. Contingency tables show the distribution, in percents, of successful and non-successful students whose responses appeared on the counseling keys. The responses which show through the counseling keys, and which are tallied, are assumed to reveal non-productive attitudes, habits, or ability levels. Presumably, the percentage of tallied responses by successful students would be lower than the percentage of tallied responses by non-successful students. This assumption has proven to be more accurate when applied to the experimental students than when applied to control students.

This difference may have occurred because of the different ways in which the two kinds of courses have been designed. Experimental English classes, especially in the first half of the first semester, call for assignments from period to period. These assignments culminate in complete papers. The relationship of each assignment to past and future assignments is emphasized. Therefore the organization of the course is clarified for the student.

In the regular classes, an advanced assignment is given, and the assignment is discussed from period to period, possibly in conjunction with the discussion of essays in the textbook. But the relationship of classwork to the future assignment is less obvious, and the control student may be less able to perceive the underlying organization of the course.

The supposition that course designs have influenced the trends of responses is weakened by the knowledge that the students were carrying at least three other kinds of classes. But the tests were given in English classes and the students knew that the tests were pertinent to a Project English experiment. So the association of the types of English classes to the types of responses would seem to be an obvious one.

To illustrate the trend of responses, twelve items have been selected from the survey. These are the items which most clearly illustrate the differences between successful and non-successful students. The responses to each item demonstrate at least a nineteen point difference between the successful and at least one non-successful category for either the experimental students or the control students.

Study Habits

The tables below summarize responses to items which have been labelled "Study Habits." The reader should remember that the responses which have been tallied are presumed to reflect non-productive habits. Therefore the lowest proportion of responses should occur among successful students.

70. When preparing for an examination I arrange facts to be learned in some logical order -- order of importance, order of presentation in class, or textbook, order of time in history, etc..

Responses To Item 70 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	21.3	34.6	46.7	31.3
Control	28.6	27.3	21.4	. . .

Table 62

An easy inference would be that the constant emphasis upon organization in the experimental course has had some influence upon responses to Item 70. Responses to the next item serve such an inference less easily.

63. Before each period I set up a goal as to how much material I will cover.

Responses To Item 63 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	47.1	57.7	66.7	52.1
Control	38.8	36.4	57.1	55.6

Table 63

An explanation of the pattern of responses to Item 63 could be that the experimental lessons during the first half of the first semester have built-in goals. Therefore experimental students might not feel the necessity of setting their own study goals to the degree that the control students would.

The next item appears to be related to the matter of goal fulfillment. However, the item was labelled both "Study Habits" and "Academic Attitudes."

5. When my assigned homework is extra long or unusually difficult, I become discouraged and either give up in disgust or skip hurriedly through the assignment,

studying only the easier part of the lesson.

Responses To Item 5 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	10.3	15.4	33.3	25.0
Control	14.3	31.8	7.1	. . .

Table 64

The influence of course design might again be inferred. Experimental lessons -- from period to period -- present short-range goals which are intended to avoid the discouraging effect of a long assignment. But the experimental lessons are progressive. If some are skipped, the rest become more difficult.

The constant demand of each successive lesson in the experimental classes may have prompted the responses to other items which have been labelled "Academic Attitudes."

Academic Attitudes

The constant system of experimental lessons is, of course, monotonous to some students. Possibly this feeling is reflected by responses to Item 15.

15. Lack of interest in my school work makes it difficult for me to keep my attention focused on assigned reading.

Responses To Item 15 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	14.7	19.2	40.0	27.1
Control	. . .	13.6	7.1	22.2

Table 65

The relatively high percent of those failing experimental students who suffered from lack of interest seems significant. The apparent influence of boredom would be more discouraging if one for-

got that a higher proportion of experimental students succeeded than did control students. Furthermore, the absence of boredom did not seem to reduce the chances of failure in those responding to Item 15. Nor does the proportion of those who find school-work uninteresting seem related to success among those responding to Item 21.

21. Some of my courses are so uninteresting that I have to "force" myself to do the assignments.

Responses To Item 21 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	17.6	38.5	26.7	29.2
Control	16.3	22.7	7.1	33.3

Table 66

The responses to Item 21, however, are qualified by responses to a related item.

16. Unless I really like a course, I believe in doing only enough to get a passing grade.

Responses To Item 16 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	8.8	19.2	20.0	16.7
Control	10.2	13.6	28.6	33.3

Table 67

Personal Attitudes

Two items labelled "Personal Attitudes" again call attention to the relationship between student persistence and success in experimental classes. The percentages of "D" and "Fail" responses to Item 15 (which has been discussed under "Academic Attitudes") is almost repeated by the responses to Item 61.

61. With me, studying is a hit-or-miss proposition depending on the mood I'm in.

Responses To Item 61 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	6.6	19.2	40.0	16.7
Control	6.1	18.2	7.1	22.2

Table 68

The pattern is again more consistent for experimental students than for control students responding to Item 38.

38. I am unable to concentrate well because of periods of restlessness, moodiness, or "having the blues."

Responses To Item 38 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	12.5	26.9	33.3	27.1
Control	20.4	36.4	21.4	44.4

Table 69

Possibly, experimental students may feel less lost because their goals have been more clearly defined.

A different sort of personal attitude is concerned with prestige.

43. The prestige of having a college education provides my main motive for going to college.

Responses To Item 43 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	20.6	15.4	40.0	22.9
Control	26.5	22.7	14.3	. . .

Table 70

The wide variations in the "Fail" and "Drop" categories might again be due to the different designs of the courses. Possibly, failing or dropping experimental students did not find the functional lessons to be the sort of "college" work they anticipated. "Attitudes" and "habits" accounted nearly all the items which demonstrated the widest spread of percentages between successful and non-successful students.

Ability

Only one item was given the single label of "Ability."

18. I have trouble with the mechanics of English composition.

Responses To Item 18 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experimental	18.4	34.6	53.3	31.3
Control	26.5	45.5	28.6	. . .

Table 71

The spread of proportions on this table undoubtedly is explained by the fact that experimental lessons have built-in units of mechanics, whereas control lessons may involve no mechanics beyond the correction of mechanical errors on papers.

Ability and Study Habits

One item was labelled both "Ability" and "Study Habits."

8. My teachers criticize my written reports as being hastily written or poorly organized.

Responses To Item 8 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experimental	6.6	26.9	6.7	12.5
Control	8.2	13.6	14.3	. . .

Table 72

Different Views

The twenty-one items which have been used to compare experimental and control students might be examined in different ways.

Among the responses to the twenty-one items by the experimental students, only four non-successful categories registered percentages which were lower than the passing percentages. The four statements included Item 43 which was concerned with the "prestige of having a college education." (See responses to Item 43 under "Personal Attitudes.") The other three items have not been mentioned in the preceding discussion because they have not revealed at least a nineteen-point difference between "Passing" and any non-successful categories. All three points involve difficulties while taking examinations.

7. Difficulty in expressing myself in writing slows me down on reports, themes, examinations and other work to be turned in.

Responses To Item 7 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experimental	26.5	23.1	26.7	31.3
Control	30.6	45.5	28.6	33.3

Table 73

17. I get nervous and confused when taking an examination and fail to answer questions to the best of my ability.

Responses To Item 17 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experimental	22.8	19.2	26.7	22.9
Control	24.5	36.4	21.4	22.2

Table 74

55. I have difficulty in picking out important points of a reading assignment -- points that are later asked on examinations.

Responses To Item 55 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	14.7	19.2	13.3	20.8
Control	18.4	22.2	21.4	11.1

Table 75

The spread between successful and non-successful categories in the experimental group does not exceed seven percentage points. Possibly the "examination" statements do not differentiate between success and non-success in the experimental group because the experimental course demands constant writing rather than performance on impromptus and examinations.

However, much the same might be said of the control group. Not much differentiation can be observed in control group responses which result in non-successful percentages which are lower than successful percentages.

Three of the thirteen items which present lower non-successful percentages than successful percentages for control students have just been discussed. They are items 43 ("prestige") and 7 and 55 ("examinations"). Two other "examination" statements show very little differentiation of categories for either the control or the experimental group.

32. Difficulty in assembling ideas and clearness within a brief amount of time results in my doing poorly on examinations.

Responses To Item 32 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	13.2	19.2	13.3	18.8
Control	14.3	18.2	14.3	11.1

Table 76

72. Although I work until the last possible minute, I am unable to finish examinations within allotted time.

Responses To Item 72 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	7.4	7.7	13.3	8.3
Control	14.3	22.7	7.1	22.2

Table 77

Several other items which show lower non-successful percentages than successful percentages are related to matters of persistence. Some of the spreads of percentages in these items are relatively wide.

One such item is 4.

4. Whether I like a course or not, I still work hard to make a good grade.

Responses To Item 4 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	20.6	38.5	26.7	39.6
Control	26.5	13.6	35.7	22.2

Table 78

A similar item is 21.

21. Some of my courses are so uninteresting that I have to "force" myself to do the assignments.

Responses To Item 21 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	17.6	38.5	26.7	29.2
Control	16.3	22.7	7.1	33.3

Table 79

Item 5 also is concerned with persistence in the face of discouragement or boredom. ("When my assigned homework is extra long or unusually difficult I become discouraged...." See Item 5 under "Study Habits and Academic Attitudes.")

One other reflects day-to-day persistence.

67. I keep my assignments up-to-date by doing my work regularly from day to day.

Responses To Item 67 of SSHA

Group	Category (in percent)			
	Pass	D	Fail	Drop
Experi-mental	15.4	15.4	33.3	33.3
Control	24.5	28.6	13.6	33.3

Table 80

Item 8 may also be concerned with persistent work habits. ("My teachers criticize my reports as being hastily written.... See Item 8 under "Ability and Study Habits.")

All of these items which are related to persistence seem to imply that persistence is a quality which is less critical and less rewarded for the control students than for the experimental students.

A couple of other items which demonstrate lower non-successful percentages than successful percentages for control students might be related to the recognition of order or logic in lessons. These are Items 70 and 63. (Item 70 states "When preparing for an examination I arrange facts to be learned in some logical order...." See Item 70 under the discussion of "Study Habits." Also see Item 63 under "Study

Habits." "Before each study period I set up a goal....")

Only one item in which non-successful students respond with a lower percentage than successful students is concerned with mechanics. The item is 18.("I have trouble with the mechanics of English composition.")

The Widest Disparities

Still another way to illustrate the difference in responses is to pinpoint the widest disparities between experimental and control percentages. (See Table 81, page 63.)

The least radical disparities can be observed among the passing students of the two groups. The greatest difference occurs in response to Item 15. ("Lack of interest in my school work makes it difficult....") Of the experimental students' responses 14.7 percent were tallied for this item, while no control group responses were tallied.

A couple of items produced a nine-point differential. The first item is 63. ("Before each study period I set up a goal....") The experimental response was 47.1 percent; the control response was 38.3 percent.[1] Although the experimental percentage was higher for Item 63 it was nine points lower for Item 67. ("I keep my assignments up to date by doing my work regularly from day to day." Experimental 15.4 percent; control 24.5 percent.) The greater importance of day-to-day persistence to the experimental student has already been discussed under "Study Habits."

A couple of items demonstrated an eight-point difference between groups of successful students; and a couple demonstrated a seven-point spread. (See Item 18 "Mechanics"; Item 38 "Personal Attitudes"; and Items 70 and 72 "Study Habits.") In each case the experimental percentage was lower. In fact, for the successful students, experimental percentages were lower in fourteen of the twenty-one sets of responses.

Differences in unsuccessful categories were much greater. The largest difference was registered for the D students' responses to Item 4. ("Whether I like a course or not, I still work hard to make a good grade.") Experimental D students, 38.5 percent; control D students, 13.6 percent -- a 24.9 point difference. The next widest variance was demonstrated by Item 7. ("Difficulty in expressing myself slows me down on reports, themes, examinations....") Experimental, 23.1 percent; control 45.5 percent -- a difference of 22.4 points. Another wide difference can be observed in the responses to Item 63 ("goal-setting"). Experimental, 57.7; control, 36.4 percent. Several other items registered divergencies which were greater than any of the divergencies in the "Pass" category, but no clear pattern has been observed.

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1. The percentages for Item 63 were the highest for successful students of both groups. Apparently goal-setting is not as critical a factor in success as other qualities.

The widest variations occur in the "Fail" category. Two items register identical percentages and both items seem to be related to attitudes. The items are 15 ("Lack of interest in my school work makes it difficult...") and 61 ("Studying is a hit-or-miss proposition depending on the mood I'm in"). In each case the responses were experimental, 40.0 percent; control, 7.1 percent. The variation was 32.9 points -- the widest margin registered between the two groups in any category. Other wide differences are registered by Item 43 ("The prestige of having a college education..."). Experimental, 40.0 percent; control, 14.3 percent -- 25.7 point difference. A 25.2 point difference is registered for Item 5 ("When my homework is extra long...I become discouraged..."). Experimental, 33.3 percent; control, 7.1 percent. Other wide variations can be noted for Items 67 and 70 (see "Study Habits"); and for Item 18 (see "Ability"). Obviously, lack of persistence is the trait which most clearly distinguishes experimental failures.

The differences for dropped students were narrower than those among D or failed students. Three items registered about a 17 point difference. Two of these seemed to imply a contradiction of each other. One was Item 4 ("Whether I like a course or not, I still work hard to make a good grade..."). Experimental, 39.6 percent; control, 22.2 percent. Registering an apparent contradiction to the trend of responses to Item 4 were the responses to Item 16 ("Unless I really like a course, I believe in doing only enough to get a passing grade"). Experimental, 16.7 percent; control, 33.3 percent. One other item also produced a 17 point difference. The item was 38 ("I am unable to concentrate well because of periods of restlessness..."). Experimental, 27.1 percent; control, 44.4 percent.

General Inferences

Some general inferences may be drawn from comparisons of the surveys of both groups.

Persistence was a quality which seemed to be more rewarded in the experimental group than in the control group. In responses involving persistence, the experimental percentages usually rose from successful to D to fail; the control responses involving persistence did not usually follow this pattern.

In addition, the scores suggest that control students were more apt to fail because of erratic performance rather than because of "nonproductive" attitudes or habits. The scores of control "failed" students were lower than those of control successful students, much more frequently than in the cases of experimental students.

In addition, mechanics seemed to have been a more important consideration for experimental students than for control students.

Finally, it might be said that the experimental group responded to the Brown-Holtzman Survey of Study Habits and Attitudes in a manner which apparently corresponds to the intent of the survey more closely than did the control group. In other words, the experimental responses

more clearly produced the rising pattern of percentages from success to failure. In the control group the "failure" percentages were more often as low or lower than the "pass" percentages. A possible inference might be that attitudes and habits were less important to success in the control group than in the experimental group. Still another possibility could be that the experimental students were more aware of what was causing success or failure than were the control students. In any case, though the percentages of responses by control students and experimental students were relatively close, percentages of responses by students in unsuccessful categories varied much more radically.

Responses To Counseling Key Items of SSHA

Item	Type	Group	Category (in percent)			
			Pass	D	Fail	Drop
63	SH	Exper.	47.1	57.7	66.7	52.1
		Control	38.8	36.4	57.1	55.6
67	SH	Exper.	15.4	15.4	33.3	33.3
		Control	24.5	28.6	13.6	33.3
70	SH	Exper.	21.3	34.6	46.7	31.3
		Control	28.6	27.3	21.4	. . .
72	SH	Exper.	7.4	7.7	13.3	8.3
		Control	14.3	22.7	7.1	22.2
5	SH & AA	Exper.	10.3	15.4	33.3	25.0
		Control	14.3	31.8	7.1	. . .
54	SH & AA	Exper.	5.1	7.7	13.3	12.5
		Control	4.1	18.4	21.4	22.2
4	AA	Exper.	20.6	38.5	26.7	39.6
		Control	26.5	13.6	35.7	22.2
15	AA	Exper.	14.7	19.2	40.0	27.1
		Control	. . .	13.6	7.1	22.2
16	AA	Exper.	8.8	19.2	20.0	16.7
		Control	10.2	13.6	28.6	33.3
21	AA	Exper.	17.6	38.5	26.7	29.2
		Control	16.3	22.7	7.1	33.3
25	AA	Exper.	17.6	26.9	20.0	33.3
		Control	14.3	22.7	14.3	22.2
30	AA & PA	Exper.	40.4	53.8	60.0	64.6
		Control	36.7	72.7	71.4	77.8
17	PA	Exper.	22.8	19.2	26.7	22.9
		Control	24.5	36.4	21.4	22.2
38	PA	Exper.	12.5	26.9	33.3	27.1
		Control	20.4	36.4	21.4	44.4
43	PA	Exper.	20.6	15.4	40.0	22.9
		Control	26.5	22.7	14.3	. . .
61	PA	Exper.	6.6	19.2	40.0	16.7
		Control	6.1	18.2	7.1	22.2
7	Abil	Exper.	26.5	23.1	26.7	31.3
		Control	30.6	45.5	28.6	33.3
18	Abil	Exper.	18.4	34.6	53.3	31.3
		Control	26.5	45.5	28.6	. . .
55	Abil	Exper.	14.7	19.2	13.3	20.8
		Control	18.4	22.7	21.4	11.1
8	Abil & SH	Exper.	6.6	26.9	6.7	12.5
		Control	8.2	13.6	14.3	. . .
32	Abil & SH	Exper.	13.2	19.2	13.3	18.8
		Control	14.3	18.2	14.3	11.1

Table 81

Correlation Study (Total Group)

During the four-year research, a study of variables was conducted on each year's collected data. Correlation matrices were developed with variables from the categories of personal, family and scholastic characteristics. Most of the correlations could be predicted but some could not.

Parents' Education and Achievement

Least expected were some negative associations between the parents' education and the students' scholastic achievement. In 1966 and 1967, the relationship between the father's education and the students' scholastic achievement was negative. In other words, as the father's education increased, the students' academic success decreased.

In 1967, the mother's education also had some negative associations with several grade point averages in high school and college courses. Moreover, the mother's education demonstrated negative associations with the "Social Studies Reading" score and the "Mathematics" score of the American College Testing Program in the data from 1967 and 1968. The "Social Studies Reading" test could be considered a measure of comprehension while the "Mathematics" test is a measure of reasoning ability. To repeat, as the mother's education increased, the students' achievement on these tests decreased.

Parents' Education and Parents' Occupations

Much more predictable were the correlations of the parents' education and occupations. The coding process assigned numerical values which increased as educational levels increased; the same code assigned numerical values which decreased as the occupational levels increased.

Therefore the father's educational level had a numerically negative relationship to his occupational level. In other words, as the father's education increased so did the level of his occupation.

The coding process applied to the mother's education and her occupation, or the father's occupation, was similar to that applied to the father's education and his occupation. Data from 1967 and 1968 consequently demonstrated a negative relationship between the mother's education and either parent's occupation. As the mother's education increased so did the professional nature of the occupation.

Relationship of Father's Education to Mother's Education

Also predictable was the relationship of the father's education to the mother's education. The father's educational level had a positive association with the mother's educational level. The

educational levels of the parents tended to be similar.

Parents' Occupations and California Test of Personality Scores

Less obvious were the relationships between the parent's occupations and some California Test of Personality scores. Because coding processes assigned decreasing numerical values to increasing occupational levels, the ratings of the parents' occupations in 1966 had a positive relationship to some California Test of Personality scores. In short, as the occupational level decreased, some levels of maturity seemed to increase. Scores suggesting such a relationship included "Self-Reliance," "Personal Adjustment," and "Total Adjustment."

Paradoxically, the father's educational level in 1966 and 1967 also had a positive association with the student's "Self-Reliance" score on the California Test of Personality.

Parents' Occupations and High School Grade Point Averages

Also in the 1966 data, the occupational level demonstrated a negative correlation with the high school natural science grade point average. The relationship reversed in 1968. In 1968, the parents' occupations had a positive relationship with the student's high school grade point average.

High School Grade Point Averages

Data from 1966, 1967, and 1968 indicated positive relationships between the total high school grade point average and the grade point averages of English/literature, humanities, social studies, natural science, language and vocational subjects. These positive relationships could be expected, since the total grade point average is based on the G.P.A. of various subjects, that a close relationship might be demonstrated. Positive correlations were observed between the total high school grade point average and several college grade point averages. The college subjects included English (experimental and regular), social science, natural science, and business courses.

In 1966 and 1967 positive correlations between various high school grade point averages were also observed. The high school subjects included English/literature, humanities, social studies, natural sciences, languages, vocational subjects. It seems that a particular quality of academic performance is maintained throughout various courses.

High School Grade Point Averages and College Tests

In 1966 and 1967, the total high school grade point average had a positive association with the scores of several tests administered in college. These scores included the "Vocabulary" score of the Cooperative English Test, the "English" and "Social Studies

Reading" scores of the American College Testing Program, the "Composite" score of the American College Testing Program, and scores from the Brown-Holtzman Survey of Study Habits and Attitudes. The Cooperative English Test and the American College Testing Program are considered measures of ability. As the high school grade point average increased so did the scores on the ability tests. The Brown-Holtzman Survey of Study Habits and Attitudes scores suggested that the levels of academic success in high school were paralleled by levels of habits and attitudes.

Tests and Sub-sections

In all years, the various ability tests (SCAT, COOP, ACT) had significant positive correlations with sub-sections within each test and, in the case of SCAT and COOP, between the tests. It seems that the tests used in the research measured levels of quality in the student's basic scholastic abilities. It also appears that the tests' sub-section designs were closely related to produce a total measurement of certain abilities. The two forms, AA and BB, of the California Test of Personality (CTP), demonstrated significant positive relationships. The CTP forms' design produces such a correlation.

> For all levels, the items of each component and therefore the Personal, Social, and Total Adjustment scores, have been made equivalent by the process of having each item of Form AA matched with an equivalent item of Form BB as to difficulty, discriminative power, and internal consistency.[1]

The Brown-Holtzman Survey of Study Habits and Attitudes had positive correlations with all of the test scores on the CTP, the grade point averages, and the hours spent on studies. It seems that there is a close relationship between study habits and attitudes and levels of maturity and that a variation in one characteristic is accompanied by a similar variation in the other characteristic. Also, this covariation is apparently followed by an improvement in scholastic achievement.

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1. Louis P. Thorpe, Willis W. Clark, and Ernest W. Tiegs, "Form BB Equivalence to Form AA," Manual, California Test of Personality, 1953 Revision (Monterey, California: McGraw-Hill Inc.), p. 4.

Factor Analysis

Various analyses were made on data collected during the four years that were not directly related to the study. However, the information from these analyses might be useful in further research.

One such analysis was the Factor Analysis. The analysis was conducted on thirty-five variables from the categories of personal, family, and scholastic characteristics. These variables include such things as age, hours employed, amount of television watched, father's and mother's education, parent's occupation, high school grade point averages, college grade point averages, credit hours enrolled in college, ability test scores, level of maturity measurements, and study habits and attitudes.

The Factor Analysis indicated consistent high loadings (negative and/or positive) for several characteristics. These clusters of characteristics were labelled "Self Concept," "High School Achievement," "Family Characteristics," and "College Entrance Ability" (reasoning and verbal ability).

The consistency of the results of the analysis suggested that several ability measurements could be consolidated as well as measurements of maturity level and study habits and attitudes. In addition, grade point averages in high school and college could be combined. The technique of data collection, then, could become less time consuming and could be directed toward the most useful and pertinent information needed to evaluate an experiment.

Results of Factor Analysis

The correlation matrix of data collected in 1965-66 included 42 variables. Factor Analysis extracted eight factors. In the final rotation, the following results were obtained:

FACTOR I. The total group had high negative loadings on the Brown-Holtzman Survey of Study Habits and Attitudes score (SSHAP), and on sub-scores of the California Test of Personality, Form BB, post test. The sub-scores included scores on Self Reliance (CSRPB), Personal Freedom (CPFBP), Feelings of Belonging (CFBPB), Personal Adjustment ($CBPP^2$), and Social Adjustment ($CBSP^2$). Factor I might then be called "Self Concept." This cluster suggests that Factor I could be an indication of the student's self concept at the conclusion of his participation in Project English.

Variable	Factor I	h^2
$CBSP^2$	-92	96
CFBPB	-88	89
$CBPP^2$	-80	82
CPFPB	-80	73
SSHAP	-70	65
CSRPB	-60	54

Table 82

FACTOR II. The total group had high negative loadings on the pre-post scores of sub tests of the School and College Ability Test, Form 1A and the Cooperative English Test, Form 1A used as entrance tests during 1965-66 and 1966-67. The SCAT Quantitative score ($SCQP^1$, $SCQP^2$) and the Total score ($SCTP^1$, $SCTP^2$) of the pre and post tests were included. Also included were the Coop Speed of Comprehension (ESP^1, ESP^2) scores on the pre and post tests. Factor II could be labelled "Reasoning Ability."

Variable	Factor II	h^2
$SCQP^1$	-90	83
$SCQP^2$	-86	81
$SCTP^1$	-85	87
$SCTP^2$	-67	88
ESP^2	-57	62
ESP^1	-50	45

Table 83

FACTOR III. Factor III is closely associated with Factor II in that high negative loading occurred on sub scores of the School and College Ability Test and the Cooperative English Test. These scores were the SCAT Verbal score ($SCVP^1$, $SCVP^2$) and the Coop Vocabulary score (EVP^1, EVP^2). Factor III could be titled "Verbal Ability."

Variable	Factor III	h^2
$SCVP^2$	-84	84
EVP^2	-84	80
EVP^1	-82	72
$SCVP^1$	-72	72
$SCTP^2$	-60	88

Table 84

FACTOR IV. Factor IV seems to be peculiar to the control group. High negative loading occurred only on the College Grade Point Average for the regular English 110 (control section) (ENC^1). However, moderate positive loadings for the total group were observed on the College Literature Grade Point Average (LIC) and the High School Vocational Grade Point Average (VOCHS). Factor IV is mixed and no appropriate title was given.

Variable	Factor IV	h^2
ENC^1	-83	87
VOCHS	55	70
LIC	54	46

Table 85

FACTOR V. The total group had high negative loading on the Total High School Grade Point Average (GPHS) and the High School English/literature Grade Point Average (ELHS). Factor V might be called "High School Overall Achievement."

Variable	Factor V	h^2
GPHS	-91	93
ELHS	-81	68

Table 86

FACTOR VI. High positive loadings for the total group occurred on High School Grade Point Averages for Humanities (HUMHS) and Vocational Subjects (VOCHS). A high positive loading was also observed on the Personal Worth score of the California Test of Personality, Form AA, Pre test (CPWPA).

A moderate positive loading occurred on the High School Language Grade Point Average (LANHS) and a moderate negative loading on the College Humanities Grade Point Average (HUMC). Factor VI could be labelled "High School Achievement-Subject Matter."

Variable	Factor VI	h^2
HUMHS	79	68
VOCHS	50	70
CPWPA	50	94
LANHS	49	43
HUMC	-42	36

Table 87

FACTOR VII. The total group had high negative loadings on the California Test of Personality, Form AA, pre test sub scores. This included scores on Self Reliance (CSRPA), Personal Worth (CPWPA), Personal Freedom (CPFPA), Feelings of Belonging (CFBPA), Personal Adjustment ($CAPP^1$), Social Adjustment ($CASP^1$), and Total Adjustment ($CATP^1$). Factor VII might be appropriately called "Initial Self Concept." This factor could be considered an indicator of the student's general level of maturity and his self concept at the start of his participation in the project.

Variable	Factor VII	h^2
$CAPP^1$	-98	99
$CATP^1$	-84	..
CPFPA	-72	62
$CASP^1$	-64	65
CSRPA	-59	80
CPWPA	-57	94
CFBPA	-57	54

Table 88

FACTOR VIII. High positive loadings for the total group occurred on High School Grade Point Averages for Social Studies (SOCHS) and Natural Sciences (SCIHS) as well as the College Grade Point Average for the Experimental English Course (ENSPC). Factor VIII seems to be peculiar to the experimental group.

Variable	Factor VIII	h^2
ENSPC	67	64
SOCHS	59	59
SCIHS	48	44

Table 89

The correlation matrix of data collected in 1966-67 included 35 variables. Factor analysis extracted ten factors. In the final rotation, the following results were obtained:

FACTOR I. The total group had high positive loadings on some scores of the California Test of Personality, Form AA, pre test. The scores included Self Reliance (CSRPA), Personal Worth (CPWPA), Personal Freedom (CPFPA), Feelings of Belonging (CFBPA), and Personal Adjustment ($CAPP^1$), Social Adjustment ($CASP^1$), and Total Adjustment ($CATP^1$). Factor I might then be called "Self Concept."

Variable	Factor I	h^2
$CATP^1$	98	98
$CAPP^1$	97	97
$CASP^1$	75	65
CFBPA	75	65
CPWPA	70	70
CPFPA	57	37
CSRPA	54	49

Table 90

FACTOR II High negative loadings for the total group were observed on several High School Grade Point Averages; Total (GPHS), English/literature (ELHS), Social Studies (SOCHS), and Natural Science (SCIHS). An appropriate title might be "High School Achievement."

Variable	Factor II	h^2
GPHS	-99	99
ELHS	-68	63
SOCHS	-65	62
SCIHS	-59	63

Table 91

FACTOR III. The total group had high positive loadings on the School and College Ability Test, Verbal score ($SCVP^1$) and the Cooperative English Test, Vocabulary score (EVP^1). These scores were from the entrance tests. Factor III might be called "Entrance Verbal Ability."

Variable	Factor III	h^2
SCVP[1]	81	77
EVP[1]	67	67

Table 92

FACTOR IV. The total group had high negative loadings on the following variables: College Credit Hour Enrolled (CHE) and Hours Spent On Studies Outside Class (HOUT). Factor IV might be called "Time and Effort" and could be considered an indication of the relationship between the number of hours a student spends in class and the amount of time he will devote to course work.

Variable	Factor IV	h^2
HOUT	-71	60
CHE	-62	64

Table 93

FACTOR V. The total group had high positive loadings on the variables of Father's Education (FATHE), Mother's Education (MOTHE) and Parent's Occupation (OCCUP). An appropriate title for Factor V would be "Family Characteristics."

Variable	Factor V	h^2
FATHE	78	69
MOTHE	63	47
OCCUP	50	40

Table 94

For the 1967-68 school year, the college replaced the School and College Ability Test, Form 1A, and the Cooperative English Test, Form 1A with the American College Test, Form 9A. This change was in effect for the 1968-69 school year also. Again, 35 variables were used from the 1967-68 data for the factor analysis. Fifteen factors were extracted.

FACTOR I. The total group had high positive loadings on several High School Grade Point Averages. These were the Total Grade Point Average (GPHS), English/literature (ELHS), Language (LANHS),

Social Studies (SOCHS), and Natural Science (SCIHS). Factor I would then be appropriately titled "High School Achievement."

Variable	Factor I	h^2
GPHS	87	99
ELHS	79	72
LANHS	78	80
SCIHS	71	72
SOCHS	55	64

Table 95

FACTOR II. The total group had high positive loadings on sub test scores of the California Test of Personality, Form AA, pre test and the Brown-Holtzman Survey of Study Habits and Attitudes score (SSHAP). The sub test scores included Self Reliance (CSRPA), Personal Worth (CPWPA), Personal Freedom (CPFPA), Feelings of Belonging (CFBPA), Personal Adjustment (CAPP[1]), Social Adjustment (CASP[1]), and Total Adjustment (CATP[1]). Factor II might be called "Self Concept."

Variable	Factor II	h^2
CATP	98	97
CAPP	96	94
CASP	83	72
CFBPA	77	68
CPWPA	64	56
CSRPA	62	70
CPFPA	60	87
SSHAP	47	55

Table 96

FACTOR III. The total group had high positive loadings on the American College Test, Form 9A, pre test Composite score (ACTC[1]), Mathematics score (ACTM[1]), Natural Science Reading score (ACTN[1]), and Social Studies Reading score (ACTS[1]). Factor III might be appropriately called "College Entrance Ability."

Variable	Factor III	h^2
ACTC[1]	97	..
ACTM[1]	77	74
ACTN[1]	74	71
ACTS[1]	56	84

Table 97

FACTOR IV. The total group had high negative loadings for the variables Father's Education (FATHE), Mother's Education (MOTHE), and a high positive loading for Parent's Occupation (OCCUP). "Family Characteristics" would be an adequate title for Factor IV.

Variable	Factor IV	h^2
FATHE	-77	71
OCCUP	74	70
MOTHE	-57	56

Table 98

FACTOR V. High positive loadings were observed for several College Grade Point Averages. The experimental English Grade Point Average (ENSPC) seemed to be closely related to the Social Studies Grade Point Average (SOCC) as well as Grade Point Averages in Business courses (BUSC) and Natural Science courses (SCIC). Factor V might be titled "College Achievement."

Variable	Factor V	h^2
ENSPC	77	73
SOCC	72	75
BUSC	55	..
SCIC	51	69

Table 99

The data analyzed from the 1968-69 school year yielded similar results as the data of 1967-68. The same 35 variables were used for the factor analysis with ten factors extracted.

FACTOR I. The total group had high positive loadings on sub test scores of the California Test of Personality, Form AA, pre test. These scores included the Personal Adjustment score (CAPP), Social Adjustment score (CASP), and the Total Adjustment score (CATP). Other scores included Feelings of Belonging (CFBPA), Personal Worth (CPWPA), Personal Freedom (CPFPA), and Self Reliance (CSRPA). A high positive loading occurred on the Brown-Holtzman Survey of Study Habits and Attitudes score (SSHAP). Factor I might be appropriately called "Self Concept."

Variable	Factor I	h^2
CATP	92	95
CAPP	88	95
CASP	83	87
CFBPA	72	68
CPWPA	64	51
CPFPA	56	62
SSHAP	54	58
CSRPA	54	59

Table 100

FACTOR II. The total group had high positive loadings on several High School Grade Point Averages. These included the Total Grade Point Average (GPHS), Social Studies Grade Point Average (SCIHS), English/literature Grade Point Average (ELHS), Natural Science Grade Point Average (SCIHS), and Grade Point Average in Vocational Subjects (VOCHS). Factor II could be called "High School Achievement."

Variable	Factor II	h^2
GPHS	79	90
SOCHS	67	64
ELHS	61	63
SCIHS	59	58
VOCHS	51	60

Table 101

FACTOR III. The total group had high positive loadings on the composite score of the American College Test, Form 9A, pre test (ACTC). High positive loadings also occurred on sub test scores of that test.

The scores included Natural Science Reading (ACTN), Social Science Reading (ACTS), and Mathematics (ACTM). Factor III might be called "College Entrance Ability."

Variable	Factor III	h^2
ACTC	88	94
ACTN	75	76
ACTS	67	72
ACTM	53	62

Table 102

FACTOR IV. Within Factor IV, high positive loadings occurred on the variables of Father's Education (FATHE) and Mother's Education (MOTHE). A moderate negative loading occurred on the variable Parent's Occupation (OCCUP). Factor IV could be titled "Family Characteristics."

Variable	Factor IV	h^2
FATHE	58	55
MOTHE	58	47
OCCUP	-40	31

Table 103

CONCLUSIONS

Measures of grades, essay ratings, and national tests supported the experimental hypothesis. The basic hypothesis was that extending the first semester of freshman composition to two structured semesters for certain categories of students would increase the proportions of success and reduce the proportions of non-success for those categories.

The categories with which the experiment was concerned comprised 51 percent of the failures and dropouts of the first semester of English Composition at MCCC at the time of the proposal, January 1965. These students had achieved between the fifteenth and thirty-fifth percentile rankings on the "Expression" section of the Cooperative English Test. According to a study made in preparation for the experiment, they were students who would not have benefited from remedial courses, yet they had not seemed ready for the rapid pace of orthodox freshman composition. Therefore, the hypothesis was developed that, for these students, more time and a careful structuring of intermediate steps would encourage success and reduce failure. This hypothesis seemed to have been substantiated by several measures.

Measures of Success: Grades

At all points of comparison, experimental students achieved higher percentages of success than did control students. Increased proportions of success were demonstrated in particular by experimental male students.

The first comparison made was between the total control group at the end of its first semester of composition (English 110), and the total experimental group at the end of its two-semester sequence (English 104 and 105).

At this point, the proportion of successful experimental students (who achieved grades of C or higher) was an improvement of 35.5 percent over the proportion of successful control students.

The proportion of experimental students who received non-transferable D's was 39 percent below the proportion of control students who received D's; and the proportion of experimental students who received failing grades of F was 29 percent less than the proportion of control students who received F's.

The percentage of control students who dropped was less than the percentage of experimental students who dropped. But the experimental drops occurred over two semesters. The percentage of experimental drops would seem to be close to, or even a little less than, the percentage of control drops which could be expected to occur over two semesters.

In the final freshman composition course (English 120), the percentage of control drops was 6 points higher than the percentage of experimental drops, though the actual numbers in either case were small.

English 120 was attended by both successful experimental and control students. Their proportions of success were again compared. The proportions of successful experimental students in this course was 15 percent higher than the proportion of successful control students. This 15 percent improvement followed, as one will recall, the 35.5 percent improvement achieved by experimental students in the beginning composition classes. The D and F grades in English 120 occurred at about the same percentages for both groups.

Sex and Grades

When grades were analyzed according to sex they seemed to imply even more significance. The experimental courses seem to have been especially profitable for males.

At the end of the two-semester sequence, the proportion of successful experimental males was 50.4 percent above the proportion of control males who had been successful at the conclusion of their first-semester composition course. The proportion of D's for experimental males was 57.6 less than the proportion of D's for control males; and the proportion of F's for experimental males was 40.4 percent less than the proportion of F's for control males.

In the final course of freshman composition (English 120) the experimental males maintained, and slightly improved, their advantage. The proportion of successful male experimental students was 11.74 percent higher than the proportion of successful control students. The 11.74 percent advantage followed, of course, the 50.4 percent advantage achieved by experimental males in the beginning courses. Percentages of D's and F's for experimental and control males were about even in English 120, and the actual numbers of unsuccessful grades were low.

Thus in English 120 the experimental males maintained and slightly increased the wide margin of advantage they had achieved in the experimental sequence. The experimental females, however, reversed the male pattern of advantage.

At the end of the experimental sequence the proportion of success for females was 11 percent higher than the proportion of success for control females at the end of their first-semester composition courses. The experimental females also received a proportion of 65 percent fewer D's and 20 percent fewer F's than the proportions of D's and F's received by control females.

The widest margin of increased success for female experimental students was achieved in the final freshman composition course (English 120). The experimental females achieved a proportion of success which was 24.48 percent above the proportion of success achieved by control

females in English 120.

To repeat, the widest margin of advantage for experimental females was achieved in the final course; the widest margin of advantage for experimental males was achieved in the beginning courses.

These varying margins may be related to class methods. The experimental courses concentrated, at the beginning, on practical subject matter; and experimental lessons strictly defined specific goals for progress. This method may have increased proportions of male success more than proportions of female success. However, the control sections required writing about the social and esthetic questions which are common to freshman composition classes. Female students may be more oriented toward social and esthetic materials than male students. One would, therefore, expect a lesser rate of success among males in the control sections than in the experimental sections.

When the successful experimental and control students passed into the final course of freshman composition (English 120), they were taught composition in terms of writing about short stories. One might expect that the esthetic nature of the course would result in an increase of the proportion of success for experimental females, and an increase in their advantage over control females. One might also expect the narrower differences in success between experimental males and among the control males who had survived the problems of writing about social and esthetic questions in freshman composition.

To look at the matter from another angle, one might predict a relatively narrow advantage of females over males in the experimental sequence and the subsequently wide margin of advantage of experimental females over experimental males in the final freshman course. These variations occurred. One might also predict the wide margin of advantage of control females over control males in the first semester composition course, and the narrower margin of advantage of the control females over control males in the final composition course.

However, experimental males achieved higher percentages of success than control males at both points of comparison; and experimental females achieved higher percentages of success than control females at both points of comparison.

In all semester, females achieved higher proportions of success than males. Nevertheless, the widest margin of advantage, at any point of comparison, was the extra margin of success achieved by experimental males over control males at the end of their beginning composition courses.

Grades and Time

Although the extra time available to experimental students did seem to have a relationship to the higher success rates of those students, time alone did not seem to be the only influence. Control students who repeated English 110 or 120 after an initial failure also had the

advantage of three semesters' experience. Yet they succeeded at a much lesser rate than the experimental students.

Measures of Success: Pre-Post Essays

Ratings of essays by experimental and control students revealed more statistically significant gains for experimental students than for control students. Passing experimental students scored statistically significant gains in sixteen out of sixteen scorings of categories summarized by the labels, "Organization" and "Ideas." In the same two categories the control students scored eight significant gains.

The initial ratings of the experimental impromptus were lowest in almost every rating, and most of the final ratings of experimental impromptus were lower than for the final control impromptus. But the experimental sequence seemed to narrow the difference between the ratings, and it seemed to produce several more statistically significant gains for passing experimental students.

The number of gains for experimental D students and experimental failing students also exceeded the number of gains scored for their counterparts in control sections. Most of the gains occurred in the broad categories of "Organization" and "Ideas."

Only a few inconsistent gains were scored by either group in the broad category of "Mechanics." Within the "Mechanics" category, neither group scored any gains at all in "Grammar" or "Spelling." Moreover, the ratings of experimental and control papers suggest that grammar, spelling and the broad category of "Mechanics" did not represent the most serious problem areas for either group. On the other hand, scores on national tests did suggest that experimental students had acquired some knowledge of mechanics from their experimental lessons.

Measures of Success: National Tests

The experimental students achieved several more statistically significant gains on national tests than did the control students in spite of the fact that the first scores of experimental students were most often lower. In the first two years of the test, the experimental group scored significant gains in the "Expression" section of the Cooperative English Test which had been used to place composition students at that time. Control students did not score statistically significant gains in the "Expression" section.

The experimental students also scored statistically significant gains in the "Vocabulary" and "Speed of Comprehension" sections of the COOP for each of the first two years. These gains were matched by gains of the control section for "Vocabulary." But the control section achieved a statistically significant gain for "Speed of Comprehension" only in the second year.

The School and College Ability Test (SCAT) was also administered during the first two years. SCAT "Verbal" gains were statistically significant for both groups during the first two years; but the experimental gains were almost twice as great.

Results of the testing may have been confused when, in the third year, the college switched to the American College Testing Program (ACT). The experimental group scored a statistically significant gain in the "English" section of the first year of ACT, but not in the second year. The control group scored statistically significant gains in the "English" section during both years.

Because of the institutional change to the ACT test, one of the objectives of the experiment could not be attained. Criteria could not be refined to determine the best levels of placement for remedial, the type of slower more structured course represented by the experimental sequence, or regular freshman composition. The ACT did not provide a precise equivalent to the Cooperative English Test. Moreover, the ACT changed its norms before each testing; consequently cumulative measures could not be maintained. This inability was unfortunate because the Brown-Holtzman scores and the essay ratings suggested that placement criteria might be refined.

Non-Intellectual Measures

In addition to testing the hypothesis that success rates could be raised for experimental students, the experiment was intended to explore non-intellectual criteria which might be related to success. Therefore, the Brown-Holtzman Survey of Study Habits and Attitudes and the California Test of Personality were administered to experimental and control students.

Brown-Holtzman Survey of Study Habits and Attitudes

One of the most significant measures of the experiment seems to have been the Brown-Holtzman Survey of Study Habits and Attitudes. Attitudes of persistence were much more closely related to success in experimental classes than in control classes. Attitudes and habits seemed to have been a more important consideration for experimental students than for control students. In experimental classes, responses most often reflected the degrees of success. In control classes the responses of failing students were often close to the responses of passing students.

California Test of Personality

The California Test of Personality indicated closely comparable gains for both groups during the four-year experiment. They gained in the specific category of "Sense of Personal Worth." The composite scores of "Social Adjustment," "Personal Adjustment," and "Total Adjustment" also registered parallel gains. Possibly, the mere effect of time, employment and college contributed to the gains in score for both groups.

Correlation Study

A correlation study of the many items of the students' background and tests revealed some interesting associations.

(1) According to the data of some years, as the educational level of the student's father increased, the "Self-Reliance" score on the California Test of Personality also tended to increase. But the overall academic achievement of the student tended to decrease.

(2) According to the data of some years, as the educational level of the student's mother increased, the overall academic achievement of the student decreased.

One can only speculate about such associations at present. One possibility might be that parents, who had some educational attainments, would encourage an academically successful child to attend a university. But parents of the same attainments would encourage a child, who had been less successful academically, to begin college at an "open door" community college.

In other words, both sets of parents might place an equal value upon education. But the parents of the less academically successful student might be obliged to have him pursue that value at an "open door" college.

Another interesting association was also indicated by the correlation study: As the parents' occupations became less professional in nature some of the students' scores on the California Test of Personality tended to increase. Those scores were in the categories of "Self-Reliance," "Personal Adjustment" and "Total Adjustment." Again, why such associations should occur can only be speculated.

Course Structure

Still other objectives of the experiment were to determine to what extent a composition course could be structured to assure continuity of learning, to prevent unnecessary duplication, and to provide the most efficient rate of learning.

The most efficient pattern for each lesson seemed to take this form: listing pertinent information, classifying the information, organizing the information, developing the organized information into a paper.

The design for the two-semester sequence of lessons evolved into this form: the writing of simple analytical reports upon subjects which emphasized a practical orientation toward college; the writing of paraphrases of simple articles; the writing of papers which compared and contrasted the opinions of articles dealing with esthetic and social subjects; the writing of papers which compared

the opinions of articles to the writers' own experiences; the writing of argumentation papers comparing present circumstances to circumstances as they might be improved if specific proposals were adopted.

The structure of the two-semester sequence also, by its very design, fulfilled some additional objectives of the experiment:

(1) a provision for some "make-up" time and teaching for those students who were academically poor risks, and yet who were not usually assigned to remedial English classes;

(2) the creation of the possibility that instructors could be less ruthless with doubtful cases at the end of the first semester in the hopes of encouraging maturing skills in the second semester.

The second of these objectives was facilitated by having instructors grant "incompletes" at the end of the first semester to students who were achieving D's or lower, but who seemed to offer some promise of improvement for the second semester in the sequence. Those students who received "incompletes" at the end of the first semester, and who achieved passing grades for the second semester, were also awarded the same passing grades to fulfill their "incompletes."

Students were granted two credit hours for each of the two semesters even though these sections met three times a week. The limitation to two credit hours seemed to have achieved the following objectives:

(1) the removal of the stigma of being assigned to purely "remedial" English classes;

(2) the amelioration of objections that hours were being paid for and work done for "no credit";

(3) the elimination of the possibility that the first course of the two-semester sequence could be transferred to another institution as an equivalent of an entire semester.

Instructors

Inasmuch as the program was conceived, in part, as a response to swiftly expanding enrollments, it was also intended to discover to what extent the introduction of part-time and new instructors affected the program. Part-time instructors could not be conveniently integrated into the experimental program, because their schedules did not permit the necessary time for consultation and coordination.

New instructors were introduced into the program with varied results. Any experimental program naturally would demand the sympathies of those within it. The most sympathetic to the experimental courses were as a rule those instructors with some experience.

Dividing the Sequence

Finally, the practicality of dividing the "experimental" sequence over the summer was examined. This division seemed to be unadvisable, in light of experience. Dividing the sequence was unsatisfactory for more than one reason. The registration procedures became too complicated to insure proper enrollment in experimental sections. Moreover, when the experimental sequence was divided by the summer, the continuity of lessons could not be maintained.

RECOMMENDATIONS

The evidence of the experiment implies several sorts of recommendations.

"High-Risk" Students and Placement

> Recommendation: A composition course for students who are above the remedial level, but who are not ready for the usual pace of regular freshman composition classes should be seriously considered.

This recommendation has been based upon the evidence of grades, essay ratings and national test scores. This experiment could not define exact placement levels because of variations in the tests used for placement. But Brown-Holtzman Survey of Study Habits and Attitudes scores and ratings of essays suggest that upper and lower limits do exist for the recommended course.

According to essay ratings, students who achieved non-transferable D's were those whose papers were consistently rated lowest in nearly all categories. They were students who persisted through two semesters, but whose work did not progress to levels of success. Perhaps they might have been better served by remedial courses.

On the other hand, the papers of the relatively few "failing" students who completed two semesters were rated as high or higher than the papers of successful students. Brown-Holtzman scores indicated that these were often students whose persistence was low, who required the stimulation of interest, and who valued the prestige of attending college. Perhaps their basic abilities and their attitudes might have been better served by regular composition courses, which seemed to demand less persistence according to Brown-Holtzman scores. (This thought must be qualified by the evidence of ratings of essays written by control students. Again the ratings of failing students were as high or higher than the ratings of successful students.)

A technique of defining levels for placement remains elusive as many research reports have noted. But the answer does not seem to be to simply forget about placement entirely. On the contrary, the evidence of this experiment emphasizes that different kinds of students profit most from different levels and different ways of instruction.

Under ideal circumstances, placement procedures might follow open enrollment in a regular composition course. The course could be designed for the freshman level, or a little below. After some six weeks' experience, the students would have a clearer idea of their needs and capabilities; the instructors would also have a clearer idea; and instruments such as the Brown-Holtzman Survey of Study Habits and Attitudes could be used in the most pertinent way. Experience and

closely pertinent data could then be employed to place students in appropriate composition courses. The practical difficulties of such a system are, of course, formidable but not insurmountable.

"High-Risk" Students and Time

Recommendation: Freshman composition should be extended in time for some kinds of students.

This recommendation has been encouraged by some data and by subjective evidence. Several of the instructors and students involved in the experiment said that they were pleased to be able to work more slowly than usual with the lessons and to be able to repeat certain kinds of lessons.

In addition, the California Test of Personality scores indicated that the students did mature in several respects during the first year of college. And a correlation analysis demonstrated that as levels of maturity increased, academic achievement also increased.

This evidence may seem slight, but it is reinforced by the experience of some experimental students. These students had not achieved passing grades for the first semester of the experimental sequence, but they seemed to show promise of improvement. These students were given "incompletes" for the first semester, and most of them improved enough to achieve passing grades during the second semester of the sequence.

Structuring Courses

Recommendation: Courses should be carefully structured for some kinds of students.

Evidence of grades, essay ratings, test scores and subjective observations support this recommendation. Experimental students seemed to work with more confidence and with more success when performing assignments of short duration with clearly defined goals.

This conclusion is also strongly implied by comparisons of experimental and control grades. The increased proportions of successful grades for experimental students does not seem to have been the result only of the extra time which they spent in their composition sequence. Control students who repeated courses spent as much time in composition classes but only a small percentage of the repeaters were successful.

Moreover, Brown-Holtzman scores indicated that the experimental students who were most persistent in their attitudes were most often rewarded by success. The same was not true of control students.

The first steps of the structured experimental lessons concentrated upon identifying and classifying evidence because these

processes seemed to present the most difficulties to the students. This continuing emphasis is very strongly recommended.

Further recommended are beginning assignments of simple analytical reports. In the experimental sequence the pattern of these first reports was elaborated from analysis, to paraphrase, to comparison and contrast, to argument.

An objection to structured lessons and courses, which one might anticipate, is that the students would find them monotonous. Some evidence of this feeling is suggested by a few Brown-Holtzman scores, although this evidence is not conclusive.

Moreover, the control students, whose scores suggested a less frequent sense of monotony, also succeeded less frequently. So even if the evidence of boredom were stronger, one would have to balance that knowledge against the knowledge that the structured lessons produced higher proportions of successful students.

However, instructors who taught the structured lessons with assurance said they did not find that the students would become as bored as the instructors had feared.

Some of the students remained interested because, as they said, they were achieving the most success on their assignments that they had achieved in years.

Lessons with Practical Value for Student Orientation

Recommendation: The subject matter of beginning lessons should have an obviously practical value for some students.

One of the considerations which maintained student interest in the first structured lessons was that they served the function of acquainting students with the practical aspects of their situation in college. Analyses of costs, personal study habits, and future course requirements are examples of assignments which were employed in the first weeks of the experimental sequence.

Such beginning lessons are recommended for several reasons: They provide easy materials for analysis; they avoid confusing the lessons about analysis by threatening the students' political opinions or his personal beliefs; and such assignments demonstrate to the student that analysis can be used for his unique practical purposes. This practicality serves the characteristic desire of "low achievers" for "useful" lessons. Practical lessons may not answer the expectations of all students, but they did seem to interest most of the students in the range investigated by the experiment.

Therefore, personally useful analyses are recommended as beginning assignments for uncertain students so that they can gain confidence in themselves and the worthiness of their own reasoning to the point where

they can analyze evidence on controversial matters in order to formulate their own arguments.

Sex and Course Design

Recommendation: Courses should be planned with male predilections in mind.

According to the evidence of grades, experimental males achieved the greatest advantage over control males during the experimental sequence. To repeat, the experimental sequence was structured and, in the beginning, concentrated upon analyses of practical subjects. The experimental females did succeed at a higher proportion than experimental males; but the difference was much narrower than the differences between the percentage of successful females and the percentage of successful males in control classes.

The evidence strongly suggests that--due to whatever organic or social factors--the design and content of regular freshman courses encourages more success among female students than among male students.

The implications of the structured courses are especially strong for public community colleges, in which the male students greatly outnumber the females.

Slower-Paced Courses and Credit

Recommendation: Partial transfer credit should be granted for courses which teach college composition at a slower pace.

Each experimental course produced two hours of credit, though the classes met three times a week. The partial credit alleviated objections, common to remedial classes, that the course could not be used for transfer credit, and that the course was not "college level."

On the other hand, granting of only partial credit eliminated the possibility that the first course of the sequence could be transferred as the equivalent of a regular composition course.

Structured Courses and Instructors

Recommendation: Instructors of structured courses should be those who sympathize with the special problems of "high-risk" students; and they should be instructors who have a considerable tolerance for routine work.

Recommendation: An instructor should be assigned no more than two such courses per semester to prevent the daily work from becoming too burdensome.

Recommendation: Instructors should become thoroughly acquainted with the intention of the course design. If not, some may feel that the course is attempting to regiment students rather than providing them with a few elementary techniques of evaluating evidence so that they can reason their ways toward their own conclusions.

Conditions of Experimentation

Recommendation: Before a long-range experiment is attempted, those conducting the experiment should make as certain as possible that conditions of testing and placement will remain stable during the period of the experiment.

Variations in personnel and student population can not, of course, be controlled perfectly, and the experimenters must acknowledge that certain kinds of fluctuations will obscure some results before the experiment can be completed.

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Appendix A

Contingency Table
Student Profile (Reported in Percent)

Variable	Item	1965-66 Experimental n[1]=44	1965-66 Control n=24	1966-67 Experimental n=85	1966-67 Control n=24	1967-68 Experimental n=132	1967-68 Control n=117	1968-69 Experimental n=166	1968-69 Control n=131
Sex	Male.....	65.9	91.7	77.7	66.7	62.1	65.0	68.7	69.5
	Female.....	34.1	8.3	22.4	33.3	37.9	35.0	31.3	30.5
Age	17 years....	9.1	. . .	37.7	26.1	25.0	20.5	22.9	17.6
	18 years....	50.0	33.3	56.5	52.2	59.1	57.3	60.8	55.7
	19 years....	18.2	54.2	2.4	8.7	6.1	9.4	9.6	13.0
	20 years....	6.8	4.2	2.4	. . .	3.0	2.6	1.2	3.1
	21 years....	6.8	. . .	. . .	. . .	1.5	0.9	1.2	4.6
	22 years....	. . .	. . .	. . .	4.4	0.8	. . .	1.8	0.8
	23 years....	2.3	. . .	. . .	. . .	. . .	0.9	0.6	0.8
	24 years....	. . .	4.2	. . .	. . .	. . .	0.9	0.6	. . .
	25 years....	. . .	. . .	. . .	. . .	1.5	1.7	1.2	. . .
	30 years....	. . .	4.2	1.2	8.7	1.5	3.4	. . .	. . .
	35 years....	6.8	. . .	. . .	. . .	0.8	0.9	. . .	1.5
	40 years....	. . .	. . .	. . .	. . .	0.8	1.7	. . .	0.8
Class Rank H. S.	Upper Quarter	5.3	. . .	6.3	5.3	11.6	16.5	11.6	9.1
	Upper Middle	31.6	45.0	38.0	31.6	35.8	31.9	28.9	31.8
	Lower Middle	36.8	30.0	32.9	47.4	33.7	29.7	34.7	25.0
	Bottom Quarter	26.3	25.0	22.8	15.8	19.0	22.0	24.8	34.1
Total G.P.A.[2] High School	0.50.....	. . .	. . .	. . .	. . .	. . .	. . .	. . .	0.8
	1.00.....	. . .	. . .	. . .	. . .	1.5	2.6	1.8	. . .
	1.50.....	16.7	8.7	9.4	4.8	9.2	9.6	13.9	13.8
	2.00.....	42.9	39.1	35.3	33.3	33.9	37.4	40.0	35.4
	2.50.....	28.6	43.5	42.4	57.1	34.6	33.9	30.3	34.6
	3.00.....	9.5	8.7	12.9	4.8	19.2	11.3	12.1	11.5
	3.50.....	. . .	. . .	. . .	. . .	0.8	3.5	1.2	3.1
	4.00.....	. . .	. . .	. . .	. . .	0.8	1.7	0.6	0.8
English/lit. G.P.A. High School	0.50.....	. . .	. . .	. . .	. . .	. . .	. . .	0.6	0.8
	1.00.....	4.8	13.0	2.4	4.8	5.4	3.5	3.0	9.4
	1.50.....	14.3	34.8	15.3	19.1	11.5	13.0	18.2	15.6
	2.00.....	42.9	17.4	43.5	52.4	31.5	38.3	38.8	35.9
	2.50.....	28.6	21.7	22.4	19.1	29.2	26.1	25.5	21.9
	3.00.....	7.1	13.0	16.5	4.8	20.0	13.9	12.1	12.5
	3.50.....	. . .	. . .	. . .	. . .	1.5	3.5	1.8	2.3
	4.00.....	. . .	. . .	. . .	. . .	0.8	1.7	. . .	1.6
Humanities G.P.A. High School	0.50.....	4.2	9.1	. . .	. . .	. . .	6.0	1.4	1.8
	1.00.....	. . .	18.2	3.3	. . .	10.9	10.0	2.9	8.9
	1.50.....	. . .	. . .	. . .	14.3	2.2	. . .	2.9	3.6
	2.00.....	25.0	9.1	20.0	28.6	17.4	24.0	20.3	5.4
	2.50.....	16.7	. . .	3.3	14.3	10.9	10.0	11.6	16.1
	3.00.....	33.3	27.3	36.7	28.6	32.6	30.0	33.3	21.4
	3.50.....	12.5	9.1	13.3	. . .	13.0	8.0	11.6	21.4
	4.00.....	8.3	27.3	23.3	14.3	13.0	12.0	15.9	21.4

Table 104

[1]n=number of cases
[2]GPA=grade point average

Contingency Table (cont.)
Student Profile (Reported in Percent)

Variable	Item	1965-66 Experimental n[1]=44	1965-66 Control n=24	1966-67 Experimental n=85	1966-67 Control n=24	1967-68 Experimental n=132	1967-68 Control n=117	1968-69 Experimental n=166	1968-69 Control n=131
Social Studies G. P. A.[2] High School	0.50.....	2.4	. . .	. . .	. . .	. . .	1.7	. . .	0.8
	1.00.....	7.1	. . .	1.2	. . .	10.1	3.5	8.5	11.8
	1.50.....	28.6	13.0	15.3	19.1	9.3	16.5	15.8	12.6
	2.00.....	16.7	43.5	29.4	33.3	27.9	27.8	32.1	29.9
	2.50.....	26.2	26.1	31.8	14.3	27.1	21.7	27.3	24.4
	3.00.....	14.3	17.4	20.0	33.3	17.8	18.3	11.5	15.0
	3.50.....	. . .	. . .	2.4	. . .	7.8	8.7	1.8	5.5
	4.00.....	4.8	. . .	. . .	. . .	. . .	1.7	3.0	. . .
Natural Sci. G. P. A. High School	0.50.....	4.9	4.4	2.4	. . .	3.2	2.7	0.6	1.6
	1.00.....	19.5	8.7	15.5	9.5	13.4	8.9	16.8	11.9
	1.50.....	24.4	30.4	20.2	14.3	19.7	27.4	22.4	27.8
	2.00.....	41.5	39.1	36.9	52.4	29.9	34.5	32.9	32.5
	2.50.....	7.3	13.0	19.1	14.3	18.1	15.9	15.5	16.7
	3.00.....	2.4	4.4	4.8	4.8	11.8	7.1	10.6	7.1
	3.50.....	. . .	. . .	. . .	. . .	3.2	0.9	0.6	2.4
	4.00.....	. . .	. . .	1.2	4.8	0.8	2.7	0.6	. . .
Language G. P. A. High School	0.50.....	4.4	21.4	8.8	. . .	6.9	7.3	13.6	15.2
	1.00.....	26.1	35.7	22.8	15.4	16.4	27.5	25.2	31.6
	1.50.....	13.0	7.1	15.8	15.4	8.2	15.9	14.6	7.6
	2.00.....	43.5	7.1	38.6	46.2	31.5	21.7	27.2	26.6
	2.50.....	4.4	14.3	7.0	. . .	16.4	14.5	8.7	6.3
	3.00.....	4.4	7.1	5.3	15.4	13.7	5.8	8.7	8.9
	3.50.....	. . .	. . .	1.8	. . .	5.5	1.5	1.0	3.8
	4.00.....	4.4	7.1	. . .	7.7	1.4	5.8	1.0	. . .
Vocational G. P. A. High School	0.50.....	5.9	. . .	. . .	. . .	1.8	1.1	1.4	0.9
	1.00.....	5.9	. . .	6.0	. . .	5.5	8.4	7.6	4.5
	1.50.....	14.7	5.6	11.9	5.0	7.3	12.6	7.6	10.7
	2.00.....	26.5	50.0	34.3	45.0	30.0	23.2	31.0	27.7
	2.50.....	17.7	11.1	23.9	15.0	21.8	23.2	20.7	18.8
	3.00.....	17.7	22.2	19.4	20.0	26.4	16.8	20.0	25.9
	3.50.....	8.8	5.6	1.5	15.0	5.5	9.5	9.0	8.9
	4.00.....	2.9	5.6	1.5	. . .	1.8	5.3	2.8	2.7
Father's Education	Grade School experience	5.3	18.2	16.2	16.7	22.2	14.0	16.2	13.6
	H.S. experience	29.0	27.3	8.1	29.2	21.4	26.9	23.8	20.5
	H.S. graduate	44.7	31.8	35.1	12.5	26.5	29.0	26.2	37.5
	College experience	15.8	4.6	21.6	33.3	18.0	20.4	16.9	21.6
	College grad.	5.3	18.2	18.9	8.3	12.0	9.7	16.9	6.8

Table 104 (cont.)

[1]n=number of cases
[2]GPA=grade point average

Contingency Table (cont.)
Student Profile (Reported in Percent)

Variable	Item	1965-66 Experimental n[1]=44	1965-66 Control n=24	1966-67 Experimental n=85	1966-67 Control n=24	1967-68 Experimental n=132	1967-68 Control n=117	1968-69 Experimental n=166	1968-69 Control n=131
Mother's Education	Grade School experience..	12.8	13.6	9.7	13.0	13.8	13.8	6.9	3.4
	H.S. experience	30.8	22.7	20.8	30.4	26.7	27.7	23.8	21.3
	H.S.graduate.	46.2	36.4	52.8	34.8	45.7	43.6	48.5	59.6
	College experience.....	2.6	13.6	12.5	21.7	9.5	11.7	15.4	11.2
	College grad.	7.7	13.6	4.2	. . .	4.3	3.2	5.4	4.5
Parent's Occupation	Prof. Tech. Mgr.	30.8	33.3	45.7	34.8	46.3	39.0	43.7	32.1
	Clerical,Sales	7.7	4.8	. . .	4.4	4.6	4.9	14.3	19.8
	Serv.Occup...	12.8	4.8	7.1	13.0	13.9	13.4	10.9	13.6
	Farming,Fish. Forestry....	. . .	. . .	. . .	. . .	0.9	1.2	1.7	. . .
	Proc.Occup...	7.7	4.8	. . .	4.4	4.6	4.9	. . .	2.5
	M&ch.Trade...	18.0	14.3	15.7	21.7	15.7	22.0	16.8	17.3
	Bench Work...	2.6	4.8	2.9	4.4	. . .	1.2	4.2	1.2
	Struct.Work..	10.3	14.3	8.6	4.4	8.3	4.9	3.4	7.4
	Misc.....	10.3	4.8	. . .	. . .	5.6	8.5	5.0	6.2
Hrs/wk Employed (Student)	1-5 hrs/wk...	9.1	7.7	5.3	. . .	. . .	. . .	5.3	5.4
	6-10 hrs/wk..	27.3	15.4	. . .	. . .	. . .	. . .	3.2	7.1
	11-15 hrs/wk.	18.2	53.9	14.0	18.8	. . .	. . .	7.4	10.7
	16-20 hrs/wk.	18.2	7.7	31.6	12.5	. . .	. . .	26.3	14.3
	21-25 hrs/wk.	9.1	. . .	28.1	12.5	. . .	. . .	25.3	28.6
	26-30 hrs/wk.	13.6	15.4	1.8	12.5	. . .	. . .	9.5	14.3
	31-35 hrs/wk.	4.6	. . .	12.3	25.0	. . .	. . .	9.5	10.7
	36-40 hrs/wk.	. . .	. . .	5.3	18.8	. . .	. . .	9.5	1.8
	41-45 hrs/wk.	. . .	. . .	1.8	. . .	. . .	. . .	4.2	7.1
Hrs/wk watching TV	1-5 hrs/wk...	60.5	45.5	36.5	37.5	. . .	. . .	37.7	38.9
	6-10 hrs/wk..	29.0	13.6	40.5	33.3	. . .	. . .	39.2	40.0
	11-15 hrs/wk.	5.3	22.7	14.9	16.7	. . .	. . .	13.1	15.6
	16-20 hrs/wk.	5.3	18.2	8.1	12.5	. . .	. . .	10.0	5.6
Drop Eng.	Yes.....	36.4	. . .	31.8	. . .	31.8	26.1	36.0	50.6
	No.....	63.6	. . .	68.2	. . .	68.2	73.9	64.0	49.4
Grade in English	Passed.....	. . .	. . .	. . .	. . .	79.8	54.7	84.5	70.9
	Failed.....	. . .	. . .	. . .	. . .	10.1	15.1	3.6	5.8
	D grade.....	. . .	. . .	. . .	. . .	9.0	30.2	10.7	18.6
	Incomplete...	. . .	. . .	. . .	. . .	1.1	. . .	1.2	4.7
Eng. 2nd time	Yes.....	. . .	. . .	. . .	. . .	. . .	25.8	16.7	16.7
	No.....	. . .	. . .	. . .	. . .	. . .	74.2	83.3	83.3

Table 104 (cont.)

[1]n=number of cases

L E G E N D

The following is a legend for the tables "Comparison of Means of Experimental and Control Groups With a Test of Significance:"

GPHS...Total grade point average-high school
ELHS...English/literature grade point average-high school
HUMHS..Humanities grade point average-high school
SOCHS..Social Studies grade point average-high school
SCIHS..Natural Science grade point average-high school
LANHS..Language grade point average-high school
VOCHS..Vocational grade point average-high school
SCVP[1]..School and College Ability Test verbal percentiles score-pre test
SCVP[2]..School and College Ability Test verbal percentile score-post test
SCQP[1]..School and College Ability Test quantitative percentiles score-pre test
SCQP[2]..School and College Ability Test quantitative percentile score-post test
SCTP[1]..School and College Ability Test total percentile score-pre test
SCTP[2]..School and College Ability Test total percentile score-post test
EVP[1]...Cooperative English Tests vocabulary percentile score-pre test
EVP[2]...Cooperative English Tests vocabulary percentile score-post test
ESP[1]...Cooperative English Tests speed of comprehension percentile score-pre test
ESP[2]...Cooperative English Tests speed of comprehension percentile score-post test
EXP[1]...Cooperative English Tests expression percentile score-pre test
EXP[2]...Cooperative English Tests expression percentile score-post test
SSHAP..Brown, Holtzman Survey of Study Habits and Attitudes percentile score
CSRPA..California Test of Personality self reliance percentile score-pre test
CSRPB..California Test of Personality self reliance percentile score-post test
CPWPA..California Test of Personality personal worth percentile score-pre test
CPWPB..California Test of Personality personal worth percentile score-post test
CPFPA..California Test of Personality personal freedom percentile score-pre test
CPFPB..California Test of Personality personal freedom percentile score-post test
CFBPA..California Test of Personality feelings of belonging percentile score-pre test
CFBPB..California Test of Personality feelings of belonging percentile score-post test
CAPP[1]..California Test of Personality personal adjustment percentile score-pre test
CBPP[2]..California Test of Personality personal adjustment percentile score-post test
CASP[1]..California Test of Personality social adjustment percentile score-pre test
CBSP[2]..California Test of Personality social adjustment percentile score-post test
CATP[1]..California Test of Personality total adjustment percentile score-pre test
CBTP[2]..California Test of Personality total adjustment percentile score-post test
GRADE..Grade received in English course
HEMP...Hours per week employed (student)
HOUT...Hours per week spent on studies outside school
TV.....Hours per week spent watching television.

Comparison of Means of Experimental and Control Groups With a Test of Significance
Academic Year 1965-66

Variable	Experimental			Control			
	m[1]	s[2]	n[3]	m	s	n	t Ratio
AGE....	19.57	3.88	44	19.25	2.05	24	t_{66} 0.3731
GPHS...	2.03	0.85	42	1.99	0.40	23	t_{63} 0.2055
ELHS...	2.00	0.67	42	1.78	0.56	23	t_{63} 1.3277
HUMHS..	2.68	0.83	24	2.54	1.37	11	t_{33} 0.3627
SOCHS..	1.98	0.80	42	2.10	0.49	23	t_{63} 0.6216
SCIHS..	1.52	0.54	41	1.63	0.51	23	t_{63} 0.8284
LANHS..	1.70	0.78	23	1.43	1.08	14	t_{62} 0.8848
VOCHS..	2.12	0.84	34	2.34	0.61	18	t_{35} 1.0086
$SCVP_2$..	40.54	16.52	44	45.83	22.56	24	t_{50} 1.1058
$SCVP_1$..	53.61	24.68	28	52.67	23.60	24	t_{66} 0.1398
$SCQP_2$..	41.89	21.67	44	57.50	29.78	24	t_{50} 2.4811 * [4]
$SCQP_1$..	48.50	20.89	28	59.17	26.13	24	t_{66} 1.6354
$SCTP_2$..	38.04	14.97	44	50.54	25.98	24	t_{50} 2.5219 *
$SCTP_1$..	50.07	20.17	28	55.21	24.70	24	t_{66} 0.8256
EVP_2...	42.41	20.85	44	38.96	21.80	24	t_{50} 0.6419
EVP_1...	48.74	21.22	27	51.84	23.55	19	t_{66} 0.4664
ESP_2...	39.98	20.41	44	43.04	26.63	24	t_{44} 0.5302
ESP_1...	50.26	23.78	27	50.26	32.67	19	t_{66} 0.0000
EXP_2...	26.57	7.69	44	24.96	22.30	24	t_{44} 0.4359
EXP...	37.23	17.58	26	32.68	29.40	19	t_{66} 0.6473
SSHAP..	25.08	21.88	39	38.71	32.90	24	t_{43} 1.9771 *
CSRPA..	42.61	27.33	44	42.54	28.09	24	t_{61} 0.0102
CSRPB..	44.75	25.82	28	42.92	23.68	24	t_{66} 0.2651
CPWPA..	60.91	27.46	44	53.83	29.10	24	t_{50} 0.9944
CPWPB..	74.14	27.38	28	72.08	28.32	24	t_{66} 0.2661
CPFPA..	38.91	25.08	44	46.67	26.97	24	t_{50} 1.1871
CPFPB..	45.36	27.52	28	41.67	27.25	24	t_{66} 0.4842
CFBPA..	47.64	23.57	44	43.33	26.93	24	t_{50} 0.6840
CFBPB..	47.41	23.79	27	40.42	23.45	24	t_{66} 1.0545
$CAPP_2$..	43.20	27.56	44	47.25	29.33	24	t_{49} 0.5655
$CBPP_1$..	35.50	34.19	44	54.67	30.22	24	t_{66} 2.2983
$CASP_2$..	47.73	21.90	44	48.96	22.94	24	t_{66} 0.2179
$CBSP_1$..	57.68	23.71	28	59.38	23.65	24	t_{66} 0.2575
$CATP_2$..	47.32	23.67	44	48.25	26.48	24	t_{50} 0.1487
CBTP..	54.21	25.42	29	56.97	26.80	24	t_{66} 0.3596
GRADE..	1.58	0.78	38	1.60	1.07	23	t_{51}
HEMP...	3.50	1.74	22	3.23	1.42	13	t_{33} 0.4718
HOUT...	19.44	8.24	39	16.74	7.96	23	t_{60} 0.3263
TV.....	1.55	0.83	38	2.14	1.21	22	t_{58} 2.2178 *

Table 105

[1]m...mean (average)
[2]s...standard deviation
[3]n...number of cases
[4]*...significant

Appendix B

Comparison of Means of Experimental and Control Groups With a Test of Significance
Academic Year 1966-67

Variable	Experimental			Control			t Ratio
	m[1]	s[2]	n[3]	m	s	n	
AGE....	17.79	1.10	85	20.08	6.79	24	t_{107} 3.0103 *[4]
GPHS...	2.04	0.36	85	2.06	0.37	21	t_{104} 0.2842
ELHS...	2.02	0.49	85	1.88	0.43	21	t_{104} 1.2142
HUMHS..	2.94	0.75	30	2.57	0.83	7	t_{35} 1.1432
SOCHS..	2.13	0.52	85	2.17	0.52	21	t_{104} 0.3578
SCIHS..	1.74	0.61	84	1.88	0.66	21	t_{103} 0.9580
LANHS..	1.61	0.74	57	2.08	0.84	13	t_{68} 2.0125 *
VOCHS..	2.22	0.83	67	2.38	0.62	20	t_{85} 0.8003
$SCVP_2^1$..	38.49	17.63	84	43.62	21.27	24	t_{106} 1.2008
$SCVP_1$..	49.47	19.83	57	50.41	22.64	22	t_{77} 0.1806
$SCQP_2^1$..	42.14	21.87	84	52.00	26.47	24	t_{106} 1.8561
$SCQP_1$..	44.60	22.07	57	53.95	28.39	22	t_{77} 1.5560
$SCTP_2^1$..	35.79	13.99	84	44.42	21.41	24	t_{106} 2.3454 *
$SCTP_1$..	43.89	16.49	57	51.05	25.61	22	t_{77} 1.4681
EVP_2^1...	38.01	18.51	85	34.75	25.08	24	t_{107} 0.7019
EVP_1...	46.46	18.51	57	45.88	22.00	24	t_{79} 0.1215
ESP_2^1...	41.56	22.45	85	38.40	27.14	24	t_{107} 0.5632
ESP_1...	48.75	22.98	57	51.58	28.86	24	t_{79} 0.4681
EXP_2^1...	23.07	5.33	85	27.25	5.42	24	t_{107} 3.3777 *
EXP_1...	35.37	18.46	57	32.17	22.32	24	t_{79} 0.6692
SSHAP..	31.30	25.55	74	45.00	24.54	24	t_{96} 2.3043 *
CSRPA..	44.68	26.49	81	45.42	24.80	24	t_{103} 0.1492
CSRPB..	45.21	27.20	58	53.61	30.14	23	t_{79} 1.2158
CPWPA..	45.80	28.35	81	56.96	31.39	24	t_{103} 1.6521
CPWPB..	68.12	29.35	58	70.26	29.63	23	t_{79} 0.2952
CPFPA..	39.33	23.85	81	42.75	26.67	24	t_{103} 0.5999
CPFPB..	43.05	26.87	58	47.83	27.87	23	t_{79} 0.7136
CFBPA..	43.11	23.68	81	40.67	26.40	24	t_{103} 0.4326
CFBPB..	49.12	25.84	57	47.48	25.64	23	t_{78} 0.2581
$CAAP_2^1$..	41.56	25.68	81	45.04	24.42	24	t_{103} 0.5905
$CBPP_1$..	53.74	28.62	57	59.09	29.96	23	t_{78} 0.7466
$CASP_2^1$..	41.36	19.41	81	45.00	23.40	24	t_{103} 0.7692
$CBSP_1$..	56.49	21.34	57	62.83	28.08	23	t_{78} 1.0942
$CATP_2^1$..	40.43	21.32	81	45.62	22.81	24	t_{103} 1.0316
CBTP..	55.00	24.51	57	61.65	28.90	23	t_{78} 1.0426
GRADE..	1.77	0.82	66	1.81	0.62	24	----------
HEMP...	4.68	1.71	57	5.69	1.85	16	t_{71} 2.0343 *
HOUT...	16.70	7.26	74	16.61	8.23	23	t_{95} 0.5235
TV.....	1.94	0.92	74	2.04	1.04	24	t 0.4287

Table 106

[1]m...mean (averge)
[2]s...standard deviation
[3]n...number of cases
[4]*...significant

L E G E N D

The following is a legend for the variable codes in the tables for the comparisons of means between the experimental and control groups:

ACTE[1]...American College Testing Program English percentile score-pre test

ACTE[2]...American College Testing Program English percentile score-post test

ACTM[1]...American College Testing Program mathematics percentile score-pre test

ACTM[2]...American College Testing Program mathematics percentile score-post test

ACTS[1]...American College Testing Program social studies reading percentile score-pre test

ACTS[2]...American College Testing Program social studies reading percentile score-post test

ACTN[1]...American College Testing Program natural science reading percentile score-pre test

ACTN[2]...American College Testing Program natural science reading percentile score-post test

ACTC[1]...American College Testing Program composite percentile score-pre test

ACTC[2]...American College Testing Program composite percentile score-post test

SSHAP...Brown, Holtzman Survey of Study Habits and Attitudes percentile score

CSRPA...California Test of Personality self reliance percentile score-pre test

CSRPB...California Test of Personality self reliance percentile score-post test

CPWPA...California Test of Personality personal worth percentile score-pre test

CPWPB...California Test of Personality personal worth percentile score-post test

CPFPA...California Test of Personality personal freedom percentile score-pre test

CPFPB...California Test of Personality personal freedom percentile score-post test

CFBPA...California Test of Personality feelings of belonging percentile score-pre test

CFBPB...California Test of Personality feelings of belonging percentile score-post test

CAPP[1]...California Test of Personality personal adjustment percentile score-pre test

CBPP[2]...California Test of Personality personal adjustment percentile score-post test

CASP[1]...California Test of Personality social adjustment percentile score-pre test

CBSP[2]...California Test of Personality social adjustment percentile score-post test

CATP[1]...California Test of Personality total adjustment percentile score-pre test

CBTP[2]...California Test of Personality total adjustment percentile score-post test

Comparison of Means of Experimental and Control Groups With a Test of Significance
Academic Year 1967-68

Variable	Experimental			Control			t Ratio
	m[1]	s[2]	n[3]	m	s	n	
GPHS...	2.11	0.49	130	2.07	0.53	115	t_{243} 0.5751
ELHS...	2.13	0.58	130	2.13	0.60	115	t_{243} 0.6806
HUMHS..	2.63	0.89	46	2.45	1.03	50	t_{94} 0.9439
SOCHS..	2.16	0.65	129	2.15	0.72	115	t_{242} 0.8772
SCHIHS.	1.82	0.73	127	1.77	0.63	113	t_{238} 0.5871
LANHS..	1.96	0.85	73	1.74	0.93	69	t_{140} 1.4687
VOCHS..	2.24	0.69	110	2.24	0.82	95	t_{203} 0.1878
$ACTE_2^1$..	25.93	8.86	125	27.86	7.06	115	t_{238} 1.8594
$ACTE_1^2$..	32.02	18.90	90	35.13	18.72	83	t_{171} 1.0861
$ACTM_2^1$..	35.56	24.77	125	32.75	23.97	115	t_{238} 0.8924
$ACTM_1^2$..	38.44	22.57	87	33.36	22.71	83	t_{168} 1.4609
$ACTS_2^1$..	36.95	21.81	125	38.23	22.35	115	t_{238} 0.4468
$ACTS_1^2$..	39.57	20.80	90	44.84	25.16	83	t_{171} 1.5080
$ACTN_2^1$..	33.61	23.54	125	39.02	24.31	116	t_{239} 1.7544
$ACTN_1^2$..	38.24	23.40	90	40.29	25.95	83	t_{171} 0.5449
$ACTC_2^1$..	30.42	17.48	125	31.69	17.85	115	t_{238} 0.5536
$ACTC^2$..	32.78	18.20	87	35.43	19.35	82	t_{167} 0.9159
SSHAP..	40.74	28.38	115	37.53	29.02	91	t_{204} 0.9985
CSRPA..	48.18	29.49	126	45.66	28.15	108	t_{232} 0.6669
CSRPB..	44.16	27.27	83	41.19	27.40	88	t_{169} 0.7084
CPWPA..	55.88	27.27	126	57.04	27.84	108	t_{232} 0.3202
CPWPB..	64.96	30.75	83	71.88	27.19	88	t_{169} 1.5592
CPFPA..	43.17	23.83	126	40.40	26.60	109	t_{233} 0.8398
CPFPB..	41.48	28.16	83	42.31	28.64	89	t_{170} 0.1920
CFBPA..	39.49	24.95	126	42.92	24.25	108	t_{232} 1.0604
CFBPB..	45.37	27.47	83	45.74	26.53	88	t_{169} 0.8838
$CAPP_2^1$..	44.03	28.41	126	42.40	27.11	108	t_{232} 0.4478
$CBPP_1^2$..	48.93	30.24	83	48.95	31.95	88	t_{169} 0.5563
$CASP_2^1$..	43.87	25.76	126	44.49	24.52	108	t_{232} 0.1894
$CBSP_1^2$..	56.44	27.94	83	57.33	26.95	88	t_{169} 0.2105
$CATP_2^1$..	44.22	26.17	126	42.87	24.58	107	t_{231} 0.4044
$CBTP^2$..	52.60	27.88	83	52.75	29.69	87	t_{168} 0.3273
GRADE..	2.20	1.08	93	1.57	0.99	86	. . . . .
HEMP...	4.58	1.81	90	4.86	2.01	63	t_{151} 0.8979
HOUT...	17.06	8.16	115	15.52	8.26	90	t_{203} 0.0141
TV.....	2.03	1.03	115	1.81	0.93	94	t_{207} 1.6456

Table 107

[1]m...mean (average)
[2]s...standard deviation
[3]n...number of cases

Comparison of Means of Experimental and Control Groups With a Test of Significance
Academic Year 1968-69

Variable	Experimental			Control			t Ratio
	m[1]	s[2]	n[3]	m	s	n	
ACTE[1]_2..	24.88	6.27	165	27.09	7.20	130	t_{293} 2.8114 *
ACTE[1]_1..	26.58	16.48	85	33.69	19.16	81	t_{164} 2.5689 *
ACTM[1]_2..	30.52	23.77	164	28.50	22.27	129	t_{291} 0.7452
ACTM[2]_1..	35.30	24.84	86	31.29	23.37	82	t_{166} 1.0763
ACTS[1]_2..	35.53	22.85	165	35.88	24.45	129	t_{292} 0.1265
ACTS[2]_1..	38.89	22.68	84	41.50	25.27	82	t_{164} 0.6998
ACTN[1]_2..	32.70	23.41	165	34.77	24.98	129	t_{292} 0.7285
ACTN[2]_1..	34.84	23.36	84	38.02	26.20	80	t_{162} 0.8212
ACTC[1]_2..	27.59	17.30	164	28.28	18.44	129	t_{291} 0.3280
ACTC[2]..	28.25	17.67	83	31.90	21.00	77	t_{158} 1.1904
SSHAP..	38.55	27.92	133	38.87	25.61	92	t_{223} 1.2780
CSRPA..	44.40	26.11	152	39.92	25.31	120	t_{270} 1.4231
CSRPB..	48.34	26.62	84	47.26	26.87	81	t_{163} 0.2607
CPWPA..	55.71	30.17	152	50.54	29.34	120	t_{270} 1.4201
CPWPB..	70.80	27.28	84	62.31	31.08	81	t_{163} 1.8664
CPFPA..	41.70	26.28	152	35.90	23.42	120	t_{270} 1.8944
CPFPB..	37.50	24.43	84	35.43	27.28	81	t_{163} 0.5133
CFBPA..	40.24	24.85	152	35.80	22.85	120	t_{270} 1.5146
CFBPB..	46.34	24.24	84	39.38	25.42	81	t_{163} 1.8008
CAPP[1]_2..	41.38	27.86	152	35.20	25.50	121	t_{271} 1.8906
CBPP[2]_1..	53.41	30.38	85	43.59	27.54	81	t_{164} 2.1784 *
CASP[1]_2..	39.24	25.65	152	32.95	22.30	120	t_{270} 2.1245 *
CBSP[2]_1..	56.16	28.95	85	43.57	26.20	81	t_{164} 2.9344 *
CATP[1]_2..	40.26	25.94	152	33.68	23.14	120	t_{270} 2.1779 *
CBTP[2]..	55.98	26.87	84	43.48	25.59	81	t_{163} 3.0569 *

Table 108

[1]m...mean (average)
[2]s...standard deviation
[3]n...number of cases
[4]*...significant

L E G E N D

The following is a legend for the tables "Comparison of Pre-Post Essay Ratings With Test of Significance:"

INT^1..Introduction rating-pre test
PAR^1..Paragraph rating-pre test
SUD^1..Supporting Detail rating-pre test
UNI^1..Unity rating-pre test
COH^1..Coherence rating-pre test
CON^1..Conclusion rating-pre test
AA^1...Analytical Approach rating-pre test
MAI^1..Maturity of Idea rating-pre test
SS^1...Sentence Sense rating-pre test
GRM^1..Grammar rating-pre test
ID^1...Idiom rating-pre test
GS^1...Grammar and Syntax rating-pre test
SPL^1..Spelling rating-pre test

INT^2..Introduction rating-post test
PAR^2..Paragraph rating-post test
SUD^2..Supporting Detail rating-post test
UNI^2..Unity rating-post test
COH^2..Coherence rating-post test
CON^2..Conclusion rating-post test
AA^2...Analytical Approach rating-post test
MAI^2..Maturity of Idea rating-post test
SS^2...Sentence Sense rating-post test
GRM^2..Grammar rating-post test
ID^2...Idiom rating-post test
GS^2...Grammar and Syntax rating-post test
SPL^2..Spelling rating-post test

Comparison of Pre-Post Essay Ratings With Test of Significance
Experimental "Passed" Group

	Variable	n[1]	Pre Test m[2]	Pre Test s[3]	Variable	Post Test m	Post Test s	t Ratio
Reader X	INT[1]...	112	3.03	1.73	INT[2]	4.19	1.69	t_{111} 5.7133 *[4]
	PAR[1]...	112	4.40	2.25	PAR[2]	5.02	1.95	t_{111} 2.6768 *
	SUD[1]...	112	3.81	1.70	SUD[2]	4.51	1.70	t_{111} 3.9539 *
	UNI[1]...	111	3.39	1.62	UNI[2]	4.19	1.61	t_{110} 4.7933 *
	COH[1]...	111	2.93	1.48	COH[2]	3.67	1.52	t_{110} 4.4307 *
	CON[1]...	112	2.38	1.58	CON[2]	3.54	1.64	t_{111} 6.4177 *
	AA[1]....	112	3.93	1.00	AA[2]	4.46	1.12	t_{111} 4.5326 *
	MAI[1]...	112	3.48	0.96	MAI[2]	3.94	1.11	t_{111} 4.2342 *
	SS[1]....	112	5.27	1.72	SS[2]	5.48	1.67	t_{111} 1.0654
	GRM[1]...	112	5.27	1.63	GRM[2]	5.12	1.73	t_{111} -0.7061
	ID[1]....	112	5.20	0.88	ID[2]	5.40	1.02	t_{111} 1.6813
	GS[1]....	112	5.20	2.08	GS[2]	5.25	1.96	t_{111} 0.2158
	SPL[1]...	112	6.21	2.01	SPL[2]	6.15	1.94	t_{111} -0.2644
Reader Y	INT[1]...	112	3.77	1.49	INT[2]	4.87	1.28	t_{111} 7.0009 *
	PAR[1]...	112	4.14	2.02	PAR[2]	4.61	1.61	t_{111} 2.4299 *
	SUD[1]...	112	3.82	1.51	SUD[2]	4.50	1.43	t_{111} 4.4244 *
	UNI[1]...	112	3.79	1.54	UNI[2]	4.59	1.44	t_{111} 4.8330 *
	COH[1]...	112	3.60	1.56	COH[2]	4.46	1.51	t_{111} 5.2954 *
	CON[1]...	112	3.32	1.66	CON[2]	4.52	1.49	t_{111} 6.9009 *
	AA[1]....	111	3.42	1.33	AA[2]	4.24	1.37	t_{110} 5.0768 *
	MAI[1]...	111	3.89	1.07	MAI[2]	4.58	1.40	t_{110} 4.6566 *
	SS[1]....	111	4.95	2.18	SS[2]	5.99	1.68	t_{110} 4.1367 *
	GRM[1]...	112	5.01	1.83	GRM[2]	5.07	1.99	t_{111} 0.2655
	ID[1] ...	112	4.32	1.94	ID[2]	4.74	1.99	t_{111} 1.9474
	GS[1]....	112	4.82	2.25	GS[2]	4.65	2.30	t_{111} -0.6049
	SPL[1]...	112	5.85	2.10	SPL[2]	5.73	2.44	t_{111} -0.4571

[1]n...number of cases
[2]m...mean (average)
[3]s...standard deviation
[4]*...significant gain

Comparison of Pre-Post Essay Ratings With Test of Significance
Experimental "D Grade" Group

	Variable	n[1]	Pre Test m[2]	Pre Test s[3]	Variable	Post Test m	Post Test s	t Ratio		
Reader X	INT[1]....	21	2.95	2.09	INT[2]	4.19	1.97	t_{20}	2.2443	*[4]
	PAR[1]....	21	4.14	2.22	PAR[2]	4.90	2.14	t_{20}	1.4265	
	SUD[1]....	21	3.38	1.72	SUD[2]	4.29	1.45	t_{20}	2.4820	*
	UNI[1]....	21	2.90	1.55	UNI[2]	3.90	1.55	t_{20}	2.7888	*
	COH[1]....	21	2.81	1.54	COH[2]	3.38	1.32	t_{20}	1.6375	
	CON[1]....	21	2.19	1.17	CON[2]	3.38	1.80	t_{20}	3.0206	*
	AA[1].....	21	3.52	1.08	AA[2]	4.29	1.01	t_{20}	2.7685	*
	MAI[1]....	21	3.05	1.12	MAI[2]	3.62	0.97	t_{20}	2.0984	*
	SS[1].....	21	4.48	2.23	SS[2]	5.24	2.02	t_{20}	1.1644	
	GRM[1]....	21	5.00	1.52	GRM[2]	5.62	1.28	t_{20}	1.5278	
	ID[1].....	21	5.05	1.16	ID[2]	5.10	0.94	t_{20}	0.1605	
	GS[1].....	21	4.86	2.15	GS[2]	4.81	2.18	t_{20}	-0.1058	
	SPL[1]....	21	6.10	2.21	SPL[2]	5.67	2.31	t_{20}	-0.8565	
Reader Y	INT[1]....	21	4.14	1.53	INT[2]	4.71	1.42	t_{20}	1.2545	
	PAR[1]....	21	3.48	1.75	PAR[2]	5.00	1.95	t_{20}	5.2607	*
	SUD[1]....	21	3.71	1.27	SUD[2]	4.33	1.85	t_{20}	1.8132	
	UNI[1]....	21	3.62	1.72	UNI[2]	4.71	1.52	t_{20}	2.6487	*
	COH[1]....	21	3.52	1.63	COH[2]	4.29	1.87	t_{20}	1.8688	
	CON[1]....	21	3.57	1.43	CON[2]	4.33	1.32	t_{20}	1.7933	
	AA[1].....	21	3.29	1.19	AA[2]	4.33	1.02	t_{20}	3.3549	*
	MAI[1]....	21	3.67	0.80	MAI[2]	4.14	1.01	t_{20}	1.7460	
	SS[1].....	21	4.76	2.12	SS[2]	4.86	2.31	t_{20}	0.1934	
	GRM[1]....	21	4.14	2.03	GRM[2]	4.67	2.24	t_{20}	1.3091	
	ID[1].....	21	4.52	2.02	ID[2]	4.10	2.39	t_{20}	-0.7914	
	GS[1].....	21	4.05	2.80	GS[2]	4.81	2.58	t_{20}	1.2275	
	SPL[1]....	21	4.05	2.56	SPL[2]	5.33	2.58	t_{20}	1.8618	

Table 110

[1]n...number of cases
[2]m...mean (average)
[3]s...standard deviation
[4]*...significant gain

Comparison of Pre-Post Essay Ratings With Test of Significance
Experimental "Fail" Group

	Variable	n[1]	Pre Test m[2]	Pre Test s[3]	Variable	Post Test m	Post Test s	t Ratio		
Reader X	INT[1]	7	3.00	1.63	INT[2]	3.57	1.99	t_6	0.7947	
	PAR[1]	7	4.86	2.04	PAR[2]	5.71	2.06	t_6	0.8690	
	SUD[1]	7	4.29	1.80	SUD[2]	4.86	2.12	t_6	0.6793	
	UNI[1]	7	3.71	1.60	UNI[2]	4.29	1.80	t_6	0.6377	
	COH[1]	7	3.29	1.25	COH[2]	3.86	1.86	t_6	0.6575	
	CON[1]	7	1.86	0.69	CON[2]	3.00	1.63	t_6	2.0655	
	AA[1]	7	3.86	0.90	AA[2]	4.43	0.98	t_6	1.5491	
	MAI[1]	7	3.29	1.25	MAI[2]	3.86	0.90	t_6	1.0820	
	SS[1]	7	4.43	1.72	SS[2]	6.14	2.27	t_6	4.0761	*[4]
	GRM[1]	7	5.43	1.72	GRM[2]	5.86	1.21	t_6	0.4931	
	ID[1]	7	4.00	1.82	ID[2]	5.29	0.76	t_6	2.4647	*
	GS[1]	7	4.57	2.37	GS[2]	4.86	1.95	t_6	0.3413	
	SPL[1]	7	6.00	2.00	SPL[2]	7.00	1.15	t_6	1.6201	
Reader Y	INT[1]	7	2.57	1.40	INT[2]	4.29	2.14	t_6	2.0479	
	PAR[1]	7	3.57	1.51	PAR[2]	5.86	1.86	t_6	3.5482	*
	SUD[1]	7	3.57	1.51	SUD[2]	5.14	1.07	t_6	2.1854	
	UNI[1]	7	3.71	1.11	UNI[2]	5.00	1.00	t_6	2.2738	
	COH[1]	7	3.14	1.68	COH[2]	4.71	1.25	t_6	1.8682	
	CON[1]	7	2.43	0.98	CON[2]	4.71	2.06	t_6	4.0423	*
	AA[1]	7	3.00	1.53	AA[2]	4.57	1.13	t_6	2.1854	
	MAI[1]	7	3.00	1.00	MAI[2]	5.00	0.82	t_6	3.7416	*
	SS[1]	7	5.14	2.67	SS[2]	6.00	2.00	t_6	0.8485	
	GRM[1]	7	5.00	2.08	GRM[2]	5.29	2.14	t_6	0.2633	
	ID[1]	7	2.86	2.12	ID[2]	4.43	2.30	t_6	2.1854	
	GS[1]	7	5.14	2.48	GS[2]	5.29	2.21	t_6	0.1666	
	SPL[1]	7	6.00	2.71	SPL[2]	6.29	2.63	t_6	0.2487	

Table 111

[1]n...number of cases
[2]m...mean (average)
[3]s...standard deviation
[4]*...significant gain

Comparison of Pre-Post Essay Ratings With Test of Significance
Control "Passed" Group

	Vari-able	n[1]	Pre Test m[2]	Pre Test s[3]	Vari-able	Post Test m	Post Test s	t Ratio		
Reader X	INT[1]. . . .	80	4.26	2.16	INT[2]	4.90	2.26	t_{79}	2.1255	*[4]
	PAR[1]. . . .	80	4.96	2.10	PAR[2]	5.04	2.17	t_{79}	0.2850	
	SUD[1]. . . .	80	5.05	2.15	SUD[2]	4.95	1.98	t_{79}	-0.3670	
	UNI[1]. . . .	80	4.41	1.89	UNI[2]	4.48	1.86	t_{79}	0.2645	
	COH[1]. . . .	80	4.01	1.78	COH[2]	3.94	1.70	t_{79}	-0.3235	
	CON[1]. . . .	80	3.09	1.84	CON[2]	3.99	2.42	t_{79}	2.9678	*
	AA[1].	80	4.60	1.05	AA[2]	4.50	1.20	t_{79}	-0.6643	
	MAI[1]. . . .	80	4.31	1.06	MAI[2]	4.19	1.32	t_{79}	-0.8317	
	SS[1].	80	6.25	2.28	SS[2]	5.71	1.69	t_{79}	-1.8923	
	GRM[1]. . . .	80	5.66	1.52	GRM[2]	5.99	1.51	t_{79}	1.3939	
	ID[1].	80	5.62	0.90	ID[2]	5.61	0.97	t_{79}	-0.0881	
	GS[1].	80	5.56	1.95	GS[2]	6.08	1.78	t_{79}	2.3215	*
	SPL[1]. . . .	80	6.48	2.24	SPL[2]	6.32	2.28	t_{79}	-0.5570	
Reader Y	INT[1]. . . .	80	4.89	2.31	INT[2]	5.44	1.89	t_{79}	1.7648	
	PAR[1]. . . .	80	4.42	2.07	PAR[2]	5.20	2.08	t_{79}	2.5238	*
	SUD[1]. . . .	80	4.38	1.84	SUD[2]	4.82	1.61	t_{79}	2.0067	*
	UNI[1]. . . .	80	4.09	1.80	UNI[2]	4.70	1.59	t_{79}	2.3134	*
	COH[1]. . . .	80	4.15	2.02	COH[2]	4.65	1.76	t_{79}	1.7169	
	CON[1]. . . .	79	3.54	2.26	CON[2]	4.71	2.30	t_{78}	3.2882	*
	AA[1].	80	3.78	1.33	AA[2]	4.49	1.52	t_{79}	3.3239	*
	MAI[1]. . . .	80	4.14	1.21	MAI[2]	4.68	1.48	t_{79}	2.5184	*
	SS[1].	80	4.30	2.42	SS[2]	5.48	2.01	t_{79}	3.3629	*
	GRM[1]. . . .	79	5.86	1.92	GRM[2]	5.70	1.92	t_{78}	-0.6194	
	ID[1].	80	5.11	1.96	ID[2]	5.08	1.83	t_{79}	-0.1400	
	GS[1].	80	4.76	2.37	GS[2]	5.46	2.06	t_{79}	1.9966	*
	SPL[1]. . . .	80	5.70	2.62	SPL[2]	5.88	2.40	t_{79}	0.6447	

Table 112

[1]n...number of cases
[2]m...mean (average)
[3]s...standard deviation
[4]*...significant gain

Comparison of Pre-Post Essay Ratings With Test of Significance
Control "D Grade" Group

	Variable	Pre Test n[1]	Pre Test m[2]	s[3]	Variable	Post Test m	Post Test s	t Ratio		
Reader X	INT[1]	40	3.95	2.10	INT[2]	4.60	2.22	t_{39}	1.6266	
	PAR[1]	40	4.22	2.74	PAR[2]	5.40	1.87	t_{39}	2.2544	*[4]
	SUD[1]	40	4.98	2.49	SUD[2]	5.08	2.04	t_{39}	0.1788	
	UNI[1]	40	3.72	2.08	UNI[2]	4.22	1.69	t_{39}	1.2540	
	COH[1]	40	3.18	1.85	COH[2]	4.00	1.75	t_{39}	2.2715	*
	CON[1]	40	2.58	2.14	CON[2]	3.98	2.09	t_{39}	2.8607	*
	AA[1]	40	4.08	0.97	AA[2]	4.32	1.14	t_{39}	1.1844	
	MAI[1]	40	3.85	0.92	MAI[2]	3.95	1.20	t_{39}	0.4426	
	SS[1]	40	6.40	2.35	SS[2]	5.38	2.02	t_{39}	-2.8277	*
	GRM[1]	40	5.75	1.96	GRM[2]	5.70	1.64	t_{39}	-0.1313	
	ID[1]	40	5.32	0.94	ID[2]	5.10	1.26	t_{39}	-0.9024	
	GS[1]	40	5.25	2.57	GS[2]	5.92	1.47	t_{39}	1.6142	
	SPL[1]	40	6.22	2.19	SPL[2]	5.65	2.36	t_{39}	-1.5532	
Reader Y	INT[1]	40	4.82	2.71	INT[2]	4.98	2.03	t_{39}	0.3571	
	PAR[1]	40	3.85	2.60	PAR[2]	4.90	2.07	t_{39}	2.2170	*
	SUD[1]	40	3.78	2.07	SUD[2]	4.45	1.74	t_{39}	1.7549	
	UNI[1]	40	3.55	2.04	UNI[2]	4.35	1.66	t_{39}	2.0726	*
	COH[1]	40	3.70	2.10	COH[2]	4.40	1.37	t_{39}	1.9151	
	CON[1]	40	3.30	2.64	CON[2]	4.08	2.00	t_{39}	1.3842	
	AA[1]	40	3.62	1.19	AA[2]	3.98	1.27	t_{39}	1.3357	
	MAI[1]	40	3.85	1.03	MAI[2]	4.15	0.92	t_{39}	1.3925	
	SS[1]	40	3.95	2.52	SS[2]	4.88	2.32	t_{39}	1.6874	
	GRM[1]	40	6.02	2.09	GRM[2]	5.20	2.11	t_{39}	-1.9076	
	ID[1]	40	4.80	2.07	ID[2]	4.42	1.95	t_{39}	-0.8448	
	GS[1]	40	4.82	2.77	GS[2]	5.08	2.00	t_{39}	0.4965	
	SPL[1]	40	5.02	2.71	SPL[2]	4.75	2.78	t_{39}	-0.5925	

Table 113

[1]n...number of cases
[2]m...mean (average)
[3]s...standard deviation
[4]*...significant gain

Comparison of Pre-Post Essay Ratings With Test of Significance
Control "Fail" Group

	Variable	n[1]	Pre Test m[2]	Pre Test s[3]	Variable	Post Test m	Post Test s	t Ratio	
Reader X	INT[1]	10	4.40	1.65	INT[2]	4.50	2.68	t_9	0.1006
	PAR[1]	10	6.50	2.59	PAR[2]	5.60	2.32	t_9	-1.0286
	SUD[1]	10	5.90	3.11	SUD[2]	5.00	2.40	t_9	-0.8336
	UNI[1]	10	5.30	2.67	UNI[2]	4.20	2.10	t_9	-1.2393
	COH[1]	10	4.70	2.26	COH[2]	3.90	2.18	t_9	-0.9097
	CON[1]	10	3.20	2.15	CON[2]	3.90	2.23	t_9	0.9200
	AA[1]	10	4.60	1.17	AA[2]	4.40	1.07	t_9	-0.3905
	MAI[1]	10	4.10	1.29	MAI[2]	3.90	1.20	t_9	-0.4285
	SS[1]	10	6.70	2.62	SS[2]	5.60	2.37	t_9	-1.2758
	GRM[1]	10	5.70	2.06	GRM[2]	6.10	2.42	t_9	0.7385
	ID[1]	10	4.90	1.10	ID[2]	5.40	0.84	t_9	1.2456
	GS[1]	10	5.30	2.71	GS[2]	5.90	1.45	t_9	0.6348
	SPL[1]	10	6.60	2.27	SPL[2]	6.60	1.50	t_9	0.0000
Reader Y	INT[1]	10	6.30	2.45	INT[2]	4.80	2.10	t_9	-1.6061
	PAR[1]	10	5.60	2.63	PAR[2]	5.10	1.52	t_9	-0.6546
	SUD[1]	10	4.90	1.66	SUD[2]	4.50	1.15	t_9	-0.7682
	UNI[1]	10	4.90	2.23	UNI[2]	4.40	1.35	t_9	-0.7644
	COH[1]	10	4.80	2.30	COH[2]	4.40	1.07	t_9	-0.5970
	CON[1]	10	5.00	2.98	CON[2]	4.80	2.20	t_9	-0.2417
	AA[1]	10	4.20	1.32	AA[2]	4.10	1.10	t_9	-0.1764
	MAI[1]	10	4.00	1.25	MAI[2]	4.40	0.97	t_9	0.8401
	SS[1]	10	4.80	3.39	SS[2]	5.60	1.50	t_9	0.7456
	GRM[1]	10	4.90	2.69	GRM[2]	5.50	2.07	t_9	0.6270
	ID[1]	10	5.10	2.23	ID[2]	4.40	1.71	t_9	-0.8168
	GS[1]	10	5.20	2.94	GS[2]	6.30	0.82	t_9	1.1461
	SPL[1]	10	4.60	3.06	SPL[2]	5.30	2.83	t_9	0.6272

Table 114

[1]n...number of cases
[2]m...mean (average)
[3]s...standard deviation

Appendix D

L E G E N D

"Comparison of Pre-Post Test Scores With Test of Significance:"

SCVP[1]...School And College Ability Test verbal percentile score-pre test

SCVP[2]...School And College Ability Test verbal percentile score-post test

SCQP[1]...School And College Ability Test quantitative percentile score-pre test

SCQP[2]...School And College Ability Test quantitative percentile score-post test

SCTP[1]...School And College Ability Test total percentile score-pre test

SCTP[2]...School And College Ability Test total percentile score-post test

EVP[1]....Cooperative English Tests vocabulary percentile score-pre test

EVP[2]....Cooperative English Tests vocabulary percentile score-post test

ESP[1]....Cooperative English Tests speed of comprehension percentile score-pre test

ESP[2]....Cooperative English Tests speed of comprehension percentile score-post test

EXP[1]....Cooperative English Tests expression percentile score-pre test

EXP[2]....Cooperative English Tests expression percentile score-post test

CSRPA...California Test of Personality self reliance percentile score-pre test

CSRPB...California Test of Personality self reliance percentile score-post test

CPWPA...California Test of Personality personal worth percentile score-pre test

CPWPB...California Test of Personality personal worth percentile score-post test

CPFPA...California Test of Personality personal freedom percentile score-pre test

CPFPB...California Test of Personality personal freedom percentile score-post test

CFBPA...California Test of Personality feelings of belonging percentile score-pre test

CFBPB...California Test of Personality feelings of belonging percentile score-post test

CAPP[1]...California Test of Personality personal adjustment percentile score-pre test

CBPP[2]...California Test of Personality personal adjustment percentile score-post test

CASP[1]...California Test of Personality social adjustment percentile score-pre test

CBSP[2]...California Test of Personality social adjustment percentile score-post test

CATP[1]...California Test of Personality total adjustment percentile score-pre test

CBTP[2]...California Test of Personality total adjustment percentile score-post test

ACTE[1]...American College Testing Program English percentile score-pre test

ACTE[2]...American College Testing Program English percentile score-post test

ACTM[1]...American College Testing Program Mathematics percentile score-pre test

ACTM[2]...American College Testing Program Mathematics percentile score-post test

ACTS[1]...American College Testing Program Social Studies Reading percentile score-pre test

ACTS[2]...American College Testing Program Social Studies Reading percentile score-post test

ACTN[1]...American College Testing Program Natural Science Reading percentile score-pre test

ACTN[2]...American College Testing Program Natural Science Reading percentile score-post test

ACTC[1]...American College Testing Program Composite percentile score-pre test

ACTC[2]...American College Testing Program Composite percentile score-post test

Comparison of Pre-Post Test Percentile Scores With Test of Significance
Academic Year 1965-66

	Variable	n[1]	Pre Test m[2]	Pre Test s[3]	Variable	Post Test m	Post Test s	t Ratio
Experimental	SCVP$_1^1$..	28	41.64	17.70	SCVP$_2^2$	53.61	24.68	t_{27} 3.6626 *[4]
	SCQP$_1^1$..	28	43.00	21.94	SCQP$_2^2$	48.50	20.89	t_{27} 2.0857 *
	SCTP^1..	28	39.89	15.93	SCTP^2	50.07	20.17	t_{27} 3.3028 *
	EVP$_1^1$...	27	42.00	21.63	EVP$_2^2$	48.74	21.22	t_{26} 2.4093 *
	ESP$_1^1$...	27	39.92	20.88	ESP$_2^2$	50.26	23.78	t_{26} 2.7475 *
	EXP^1...	26	27.19	7.82	EXP^2	37.23	17.58	t_{25} 2.7048 *
	CSRPA..	28	43.57	28.54	CSRPB	44.75	25.82	t_{27} 0.2330
	CPWPA..	28	60.18	28.50	CPWPB	74.14	27.38	t_{27} 2.4665 *
	CPFPA..	28	40.36	25.85	CPFPB	45.36	27.52	t_{27} 0.8073
	CFBPA..	27	47.22	20.11	CFBPB	47.41	23.79	t_{26} 0.3065
	CASP$_1^1$..	28	47.14	20.88	CBSP$_2^2$	57.68	23.71	t_{27} 2.4825 *
	CATP^1..	29	44.55	23.86	CBTP^2	54.21	25.42	t_{28} 2.1955 *
Control	SCVP$_1^1$..	24	45.83	22.56	SCVP$_2^2$	52.67	23.60	t_{23} 2.0276 *
	SCQP$_1^1$..	24	57.50	29.78	SCQP$_2^2$	59.17	26.13	t_{23} 0.6014
	SCTP^1..	24	50.54	25.98	SCTP^2	55.21	24.70	t_{23} 1.6167
	EVP$_1^1$...	19	42.53	22.52	EVP$_2^2$	51.84	23.55	t_{23} 3.5166 *
	ESP$_1^1$...	19	44.79	28.40	ESP$_2^2$	50.26	32.67	t_{18} 1.1439
	EXP^1...	19	27.63	24.05	EXP^2	32.68	29.40	t_{18} 1.3361
	CSRPA..	24	42.54	28.09	CSRPB	42.92	23.68	t_{23} 0.1030
	CPWPA..	24	53.83	29.10	CPWPB	72.08	28.32	t_{23} 3.4358 *
	CPFPA..	24	46.67	26.97	CPFPB	41.67	27.25	t_{23} -0.7806
	CFBPA..	24	43.33	26.93	CFBPB	40.42	23.45	t_{23} -0.5899
	CAPP$_1^1$..	24	47.25	29.33	CBPP$_2^2$	54.67	30.22	t_{23} 1.8878
	CASP$_1^1$..	24	48.96	22.94	CBSP$_2^2$	59.38	23.65	t_{23} 2.7989 *
	CATP^1..	24	48.25	26.48	CBTP^2	56.79	26.80	t_{23} 2.5750 *

Table 115

[1]n...number of cases
[2]m...mean (average)
[3]s...standard deviation
[4]*...significant gain

Comparison of Pre-Post Test Percentile Scores With Test of Significance
Academic Year 1966-67

	Vari-able	n[1]	Pre Test m[2]	Pre Test s[3]	Vari-able	Post Test m	Post Test s	t Ratio		
Experimental	$SCVP_1^1$..	56	38.71	17.38	$SCVP_2^2$	49.68	19.94	t_{55}	6.1866	*[4]
	$SCQP_1^1$..	56	41.68	21.92	$SCQP_2^2$	44.54	22.27	t_{55}	1.1873	
	$SCTP_1^1$..	56	36.02	14.63	$SCTP_2^2$	43.93	16.63	t_{55}	4.0415	*
	EVP_1^1...	57	38.65	19.62	EVP_2^2	46.46	18.58	t_{56}	4.1576	*
	ESP_1^1...	57	42.21	22.40	ESP_2^2	48.75	22.98	t_{56}	2.5719	*
	EXP_1^1...	57	23.51	5.64	EXP_2^2	35.37	18.46	t_{56}	5.1101	*
	CSRPA..	58	45.55	26.02	CSRPB	45.21	27.20	t_{57}	-0.1123	
	CPWPA..	58	46.07	29.53	CPWPB	68.12	29.35	t_{57}	5.7277	*
	CPFPA..	58	39.55	24.41	CPFPB	43.05	26.87	t_{57}	0.9001	
	CFBPA..	57	43.54	23.92	CFBPB	49.12	25.84	t_{56}	1.6599	
	$CAPP_1^1$..	57	42.12	25.90	$CBPP_2^2$	53.74	28.62	t_{56}	3.9143	*
	$CASP_1^1$..	57	43.16	18.53	$CBSP_2^2$	56.49	21.34	t_{56}	5.0035	*
	$CATP_1^1$..	57	42.19	21.36	$CBTP_2^2$	55.00	24.51	t_{56}	4.9175	*
Control	$SCVP_1^1$..	22	44.50	22.01	$SCVP_2^2$	50.41	22.64	t_{21}	2.4499	*
	$SCQP_1^1$..	22	52.04	25.94	$SCQP_2^2$	53.95	28.39	t_{21}	0.5148	*
	$SCTP_1^1$..	22	45.04	21.90	$SCTP_2^2$	51.04	25.61	t_{21}	2.4451	*
	EVP_1^1...	24	34.75	25.08	EVP_2^2	45.88	22.00	t_{23}	3.0743	*
	ESP_1^1...	24	38.50	27.14	ESP_2^2	51.58	28.86	t_{23}	5.2138	*
	EXP_1^1...	24	27.25	5.42	EXP_2^2	32.17	22.32	t_{23}	1.2249	
	CSRPA..	23	46.52	24.74	CSRPB	53.61	30.14	t_{23}	1.2570	
	CPWPA	23	57.26	32.06	CPWPB	70.26	29.63	t_{22}	2.8403	*
	CPFPA	23	44.57	25.71	CPFPB	47.83	27.87	t_{22}	0.4860	
	CFBPA	23	42.00	26.16	CFBPB	47.48	25.64	t_{22}	1.1140	
	$CAPP_1^1$	23	46.57	23.77	$CBPP_2^2$	59.09	29.96	t_{22}	2.8814	*
	$CASP_1^1$	23	46.52	22.69	$CBSP_2^2$	62.83	28.08	t_{22}	4.6167	*
	$CATP_1^1$	23	47.17	21.99	$CBTP_2^2$	61.65	28.91	t_{22}	5.3998	*

Table 116

[1]n...number of years
[2]m...mean (average)
[3]s...standard deviation
[4]*...significant gain

Appendix D

Comparison of Pre-Post Test Percentile Scores With Test of Significance
Academic Year 1967-68

	Variable	n[1]	Pre Test m[2]	Pre Test s[3]	Variable	Post Test m	Post Test s	t Ratio		
Experimental	ACTE[1]...	86	25.91	9.18	ACTE[2]	32.28	18.94	t_{85}	3.3502	*[4]
	ACTM[1]...	83	36.63	24.22	ACTM[2]	37.83	22.50	t_{82}	0.6591	
	ACTS[1]...	86	38.32	21.65	ACTS[2]	40.38	20.81	t_{85}	1.0868	
	ACTN[1]...	86	32.90	23.26	ACTN[2]	38.44	23.91	t_{85}	2.3077	*
	ACTC[1]...	83	30.94	17.42	ACTC[2]	33.24	18.49	t_{82}	1.8028	
	CSRPA...	83	46.86	28.06	CSRPB	44.16	27.27	t_{82}	-1.0294	
	CPWPA...	83	55.55	29.51	CPWPB	64.96	30.75	t_{82}	3.2609	*
	CPFPA...	83	43.66	24.05	CPFPB	41.48	28.16	t_{82}	-0.7325	
	CFBPA...	83	39.81	25.46	CFBPB	45.37	27.47	t_{82}	2.1847	*
	CAPP[1]...	83	44.81	29.00	CBPP[2]	48.93	30.24	t_{82}	1.8297	
	CASP[1]...	83	43.70	26.05	CBSP[2]	56.44	27.94	t_{82}	6.1661	*
	CATP[1]...	83	44.42	27.08	CBTP[2]	52.60	27.88	t_{82}	4.1480	*
Control	ACTE[1]...	82	27.84	7.50	ACTE[2]	35.27	18.80	t_{81}	3.7384	*
	ACTM[1]...	82	33.20	25.96	ACTM[2]	33.76	22.57	t_{81}	0.2908	
	ACTS[1]...	82	39.43	22.96	ACTS[2]	45.35	24.87	t_{81}	2.7309	*
	ACTN[1]...	83	41.01	24.94	ACTN[2]	40.29	25.95	t_{82}	-0.3004	
	ACTC[1]...	81	33.20	18.79	ACTC[2]	35.79	19.18	t_{80}	1.7738	
	CSRPA...	87	44.98	28.71	CSRPB	41.09	27.54	t_{86}	-1.6772	
	CPWPA...	87	56.29	29.27	CPWPB	72.13	27.24	t_{86}	4.8777	*
	CPFPA...	88	40.76	27.08	CPFPB	42.34	28.81	t_{87}	0.6509	
	CFBPA...	87	42.59	25.69	CFBPB	45.80	26.67	t_{86}	1.2709	
	CAPP[1]...	87	42.31	28.30	CBPP[2]	49.06	32.12	t_{86}	3.1921	*
	CASP[1]...	87	45.69	23.98	CBSP[2]	57.30	27.11	t_{86}	5.5132	*
	CATP[1]...	86	43.51	25.10	CBTP[2]	52.78	29.87	t_{85}	5.0483	*

Table 117

[1]n...number of cases
[2]m...mean (average)
[3]s...standard deviation
[4]*...significant gain

Comparison of Pre-Post Test Percentile Scores With Test of Significance
Academic Year 1968-69

	Vari-able	n[1]	Pre Test m[2]	Pre Test s[3]	Vari-able	Post Test m	Post Test s	t Ratio		
Experimental	ACTE[1]...	84	26.17	6.13	ACTE[2]	26.74	16.51	t_{83}	0.3035	
	ACTM[1]...	84	31.45	25.14	ACTM[2]	35.71	24.85	t_{83}	1.9391	
	ACTS[1]...	83	34.06	22.83	ACTS[2]	38.78	22.80	t_{82}	2.2129	*[4]
	ACTN[1]...	83	33.83	23.37	ACTN[2]	34.59	23.38	t_{82}	0.2857	
	ACTC[1]...	81	28.25	17.58	ACTC[2]	28.48	17.69	t_{80}	0.1630	
	CSRPA...	82	47.99	24.82	CSRPB	48.18	26.82	t_{81}	0.0592	
	CPWPA...	82	60.06	28.35	CPWPB	70.45	27.51	t_{81}	3.4569	*
	CPFPA...	82	40.52	26.83	CPFPB	37.07	24.46	t_{81}	-1.1747	
	CFBPA...	82	40.79	26.20	CFBPB	45.28	23.54	t_{81}	1.6068	
	CAPP[1]...	83	42.86	28.75	CBPP[2]	52.77	30.42	t_{82}	3.5694	*
	CASP[1]...	83	40.39	25.28	CBSP[2]	55.47	28.94	t_{82}	7.4031	*
	CATP[1]...	82	42.22	26.42	CBTP[2]	55.27	26.80	t_{81}	5.7711	*
Control	ACTE[1]...	81	27.92	7.73	ACTE[2]	33.69	19.16	t_{80}	3.0213	*
	ACTM[1]...	81	26.77	22.72	ACTM[2]	31.31	23.52	t_{80}	2.2050	*
	ACTS[1]...	81	38.74	25.24	ACTS[2]	41.85	25.22	t_{80}	1.6707	
	ACTN[1]...	79	34.61	23.59	ACTN[2]	38.48	26.05	t_{78}	1.5538	
	ACTC[1]...	76	28.51	18.56	ACTC[2]	32.18	20.98	t_{75}	2.2349	*
	CSRPA...	81	41.06	25.77	CSRPB	47.26	26.87	t_{80}	2.2266	*
	CPWPA...	81	50.47	29.07	CPWPB	62.31	31.08	t_{80}	3.6914	*
	CPFPA...	81	35.06	23.49	CPFPB	35.43	27.28	t_{80}	0.1482	
	CFBPA...	81	36.37	23.11	CFBPB	39.38	25.42	t_{80}	1.0705	
	CAPP[1]...	81	36.20	26.07	CBPP[2]	43.59	27.54	t_{80}	3.3524	*
	CASP[1]...	81	33.30	23.23	CBSP[2]	43.57	26.20	t_{80}	4.8300	*
	CATP[1]...	81	33.94	23.87	CBTP[2]	43.48	25.59	t_{80}	5.2501	*

Table 118

[1]n...number of cases
[2]m...mean (average)
[3]s...standard deviation
[4]*...significant gain

M A C O M B C O U N T Y C O M M U N I T Y C O L L E G E

Project English

DATA SHEET

(1) Name: _____

(2) Project Number: _____

Social Security Number: _____

(3) Sex and Group:

___1) Experimental — Male
___2) Control — Male

___3) Experimental — Female
___4) Control — Female

(4) Section Number: _____

(5) Instructor: _____

___ Full time
___ Part time

(6) Enrolling for semester...

___1) Fall, 1965
___2) Spring, 1966
___3) Fall, 1966
___4) Spring, 1967
___5) Fall, 1967
___6) Spring, 1968
___7) Fall, 1968
___8) Spring, 1969
___9) Other

(7) Type of student...

___1) Day - Full time
___2) Day - Part time
___3) Evening - Full time
___4) Evening - Part time

(8) Nearest age - (last birthday)
Age:

(9) Armed Forces status...
___1) Veteran
___2) Member
___3) Non-veteran

(10) Marital Status...
___1) Single
___2) Married
___3) Divorced
___4) Widow/Widower

(11) Occupation of Parent...
___1) Professional, Technical and Managerial
___2) Clerical and Sales
___3) Service Occupation
___4) Farming, Fisheries, Forestry
___5) Processing Occupations
___6) Machine Trades
___7) Bench Work
___8) Structural Work
___9) Miscellaneous Occupations

(12) High School Achievement...
___1) Graduate
___2) Non-graduate
___3) G.E.D.-armed forces
___4) Adult education

(13) Number of high schools attended...
___1) One
___2) Two
___3) More than two

(14) High School attended:
Name: _____

(15) Type of High School...
___1) Public
___2) Parochial
___3) Private

(17) If a graduate, time since graduation...
___1) Less than one year
___2) One year
___3) Two years
___4) Three years
___5) Four to five years
___6) Six to ten years
___7) Eleven to fifteen years
___8) Sixteen to twenty years
___9) More than twenty-one years

(18) Expectation of earning degree at M.C.C.C. ...
___1) Yes
___2) No

(19) Expectation of transferring...
___1) Yes
___2) No

(20) College or University of expected transfer...
___1) Wayne State University
___2) University of Detroit
___3) Michigan State University
___4) University of Michigan
___5) Eastern Michigan University
___6) Central Michigan University
___7) Western Michigan University
___8) Northern Michigan University
___9) Ferris State
__10) Other
___X) No Data

(21) High school and community activities...
___1) Varsity sports
___2) Extra-curricular sports
___3) School government
___4) Social organizations
___5) Service organizations
___6) Musical groups
___7) Political groups
___8) Academic groups
___9) No data

(22) Number of high school and community activities listed...
___1) One
___2) Two
___3) Three
___4) Four
___5) More than four
___6) No Data

(23) School honors or awards earned
___1) Scholastic awards
___2) Citizenship awards
___3) Athletic awards
___4) Musical awards
___5) No Data

(24) Community honors or awards earned...
___1) Citizenship awards
___2) Athletic awards
___3) Scouting awards
___4) Church awards
___5) No Data

(25) Hobbies or special interests...
___1) Sports and outdoor act.
___2) Intellectual activities
___3) Artistic activities
___4) Handicrafts
___5) Mechanical interests
___6) Service activities
___7) Social activities
___8) No Data

(26) Types of employment
___1) Unskilled
___2) O.J.T.
___3) Technical
___4) Automotive
___5) Secretarial
___6) Clerical
___a: Sales
___b: Bookkeeping
___c: File
___d: Other

(27) M.C.C.C. curriculum
___1) Two-year college parallel
___2) Less than two-year college parallel sequence
___3) Vocational education sequence
___4) No Data

(28) Vocational pursuits...
___1) Education
___2) Science
___3) Health science
___4) Industrial technology
___5) Business administration
___6) Medical technology
___7) General business
___8) Engineering
___9) Other
___0) No Data

M.C.C.C. Cr. hrs. enrolled_____

E-2

(29) High school grade point average in English and literature...

GPA:

(30) Did the student take twelfth grade English?
___1) Yes
___2) No

(31) Did the student have remedial courses in reading?
___1) Yes
___2) No

(32) Did the student have special speech correction classes?
___1) Yes
___2) No

(33) High school grade point average in Humanities...

GPA:

(34) High school grade point average in Social Studies

GPA:

(35) High school grade point average in Natural Science...

GPA:

(36) High school grade point average in Language...

GPA:

(37) Vocational training grade point average...

GPA:

(38) Class rank (from the top)...
___1) Upper quarter
___2) Upper middle quarter
___3) Lower middle quarter
___4) Bottom quarter

Total G.P.A.:_____

HIGH SCHOOL TEST SCORES

(39) Last intellectual potential test administered...
___1) California Test of Mental Maturity
___2) Herman-Nelson
___3) Lorge-Thorndike
___4) Otis-Beta
___5) Otis-Gamma
___6) Other
___7) No Data

(40) Grade level at which intellectual test was administered...

	GRADE	YEAR
___1)	Seventh	
___2)	Eighth	
___3)	Ninth	
___4)	Tenth	
___5)	Eleventh	
___6)	Twelfth	
___7)	Other	
___8)	No Data	

(41) Measured I.Q. ...

I.Q.:

MACOMB COUNTY COMMUNITY COLLEGE
Project English Test Scores

(96) Test	Date Taken (mo./yr.)
SCAT	
COOP	
ACT	
CTP AA	
CTP BB	
BHSSHA	
Questionnaire	

American College Test

		Entrance		2nd Testing	
		std.	%ile	std.	%ile
(97) 1)	English				
(98) 2)	Mathematics				
(99) 3)	Social Studies				
(100) 4)	Natural Science				
(101) 3)	Composite				

(102) CALIFORNIA TEST OF PERSONALITY - Personal Adjustment

	SCORE		%ILE RANK	
	AA	BB	AA	BB
a) Self Reliance	____	____	____	____
b) Personal Worth	____	____	____	____
c) Personal freedom	____	____	____	____
d) Feelings of Belongings	____	____	____	____
e) Withdrawal Tendencies	____	____	____	____
f) Nervous symptoms	____	____	____	____
Total Personal Adjustment	____	____	____	____

(103) CALIFORNIA TEST OF PERSONALITY - Social Adjustment

	SCORE		%ILE RANK	
	AA	BB	AA	BB
a) Social Standards	____	____	____	____
b) Social Skills	____	____	____	____
c) Anti-Social Tendencies	____	____	____	____
d) Family Relations	____	____	____	____
e) School Relations (Oct.)	____	____	____	____
f) Community Relations	____	____	____	____
Total Social Adjustment	____	____	____	____

(104) CALIFORNIA TEST OF PERSONALITY - Total Adjustment

SCORE		%ILE RANKS	
AA	BB	AA	BB
____	____	____	____

(105) BROWN-HOLTZMAN SURVEY OF STUDY HABITS AND ATTITUDES (1953 Edition)

No. Right _____

Elimination _____

Raw Score _____ Percentile Score _____

(106) College Experience.

SEMESTER	YEAR	COURSE	GRADE

Appendix E

M A C O M B C O U N T Y C O M M U N I T Y C O L L E G E

WARREN, MICHIGAN

Personal Inventory

Student Personal Data

1. Sex: ___M, ___F; ___Single, ___Married.
2. Birth Date: Month_____ Day_____ Year_____.
3. Place of Birth: State_____ City_____;
   How long did you live there?_____.
4. What city do you live in now?_____. How long have you lived there?_____.
5. Do you own your own car? ___Yes, ___No. If yes, how did you get the money to buy it?

   ___My own money ___Money given by a relative

   ___My parents' money ___Other source
6. Do you drive a car daily? ___Yes, ___No.
7. Do you date regularly? ___Yes, ___No.

   ___Once per week ___Daily

   ___Twice per week ___Seldom

   ___Several times per week ___Never
8. Are you going steady? ___Yes, __No.
9. List below all organizations to which you belong in and out of school.

   1._____ 4._____

   2._____ 5._____

   3._____ 6._____
10. Approximately how many hours per week do you spend watching T.V.?

    ___1 to 5 ___11 to 15

    ___6 to 10 ___16 to 20

    ___More than 20

11. List below the T.V. programs you watch regularly.

1._____ 4._____

2._____ 5._____

3._____ 6._____

12. Which T.V. program listed in #11 is your favorite?_____.

13. List below the magazines you read regularly.

1._____ 4._____

2._____ 5._____

3._____ 6._____

14. How often do you attend movies?

___More than once a week ___Twice a month

___Once a week ___Monthly

___Seldom

Student's Educational Background

1. Name of high school from which you graduated_____.
Location of high school_____Year of graduation____.

2. If you did not graduate from high school what did you do to achieve the equivalency of a high school diploma?

___Took a correspondence course

___Took the G E D test

___Other; please state_____

Parents' Educational Background

1. Indicate the years of schooling your parents had.

FATHER

___0 to 6 years ___Two years of college

___7 to 8 years ___Three years of college

___9 to 10 years ___Four years of college

___11 to 12 years ___Graduated from college

___Finished high school ___Went to a graduate or professional school

___One year of college

MOTHER

___0 to 6 years
___7 to 8 years
___9 to 10 years
___11 to 12 years
___Finished high school
___One year of college
___Two years of college
___Three years of college
___Four years of college
___Graduated from college
___Went to a graduate or professional school

Family Activities and Interests

1. Is your father currently employed? ___Yes; ___No. If yes, what does he do in his work?_____.

2. Is your mother currently employed? ___Yes; ___No. If yes, what does she do in her work?_____.

3. Please indicate what is typical of your family on the scale below in terms of the amount of reading done by members of your family.

MY FAMILY READS BOOKS...

Daily — Week-ends — Seldom — Never

MY FAMILY READS MAGAZINES...

Daily — Week-ends — Seldom — Never

MY FAMILY READS A NEWSPAPER...

Daily — Week-ends — Seldom — Never

4. List the magazines which your family subscribes to in the space below.

_____

_____

5. Write below the newspapers to which your family subscribes.

_____

_____

6. Do you or any member of your family belong to any book clubs? ___Yes; ___No. If yes, what clubs?_____

7. Name the hobbies of your family members below:

   Father _____

   Mother _____

   Siblings _____

   Self _____

8. What is your family's preference in terms of church affiliations? (OPTIONAL) _____

9. Indicate how often you attend church.

   ___Every Sunday
   ___Some weekdays and Sunday too
   ___Twice a month
   ___Monthly
   ___Less than once a month
   ___Never
   ___Prefer not to answer

10. My mother attends church...

   ___Every Sunday
   ___Some weekdays and Sunday too
   ___Twice a month
   ___Monthly
   ___Less than once a month
   ___Never
   ___Prefer not to answer

11. My father goes to church...

   ___Every Sunday
   ___Some weekdays and Sundays too
   ___Twice a month
   ___Monthly
   ___Less than once a month
   ___Never
   ___Prefer not to answer

12. My father's religious affiliation is_____.
   (OPTIONAL)

13. My mother's religious affiliations is_____.
   (OPTIONAL)

Current Education Data

1. Are you currently enrolled full-time or part-time?

   ___Full-time
   ___Part-time

2. How many credits did you enroll for at the beginning of this semester?_____.

3. Do you expect to get an associate degree at MCCC? ___Yes, ___No.

4. Do your expect to transfer to a senior insititution? ___Yes, ___No. If yes, where?_____

5. Had you decided on a vocation when you came to MCCC? ___Yes, ___No.

6. Have you changed your vocational plans since you started at MCCC? ___Yes, ___No. Vocational Aim_____.

7. If your answer to question #6 is yes, state briefly why you changed._____

_____

Study Habits

1. Are you currently employed? ___Yes, ___No.

2. How many hours per week do you work?

___1 to 5	___16 to 20	___31 to 35
___6 to 10	___21 to 25	___36 to 40
___11 to 15	___26 to 30	___41 to 45

3. If you are employed, is your job necessary for you to remain a student at MCCC? ___Yes, ___No.

4. If you are employed, how does your employment effect your studies?

___It interferes with my studies.

___It has no effect on my studies.

___It helps my studies.

5. Indicate the effect your owning and riving a car has on your school work.

___It has no influence on my school work.

___My school work is handicapped by my driving.

___My driving helps my school work.

6. Indicate the effect dating has on your school work.

___It has no effect on my school work.

___It helps me in my school work.

___It causes me to neglect my school work.

7. Indicate the hours per week spent on your school work outside of the classroom.

   _____hours in the library

   _____hours at home

   _____hours elsewhere

8. Do you feel that the hours you listed in question #7 are as much as you need for studying? ___Yes, ___No.

9. How do you feel about your home environment as a place to study?

   ___It is good for study.

   ___It is distracting most of the time.

   ___It has no influence on my studies.

Language

1. Indicate below the birth place of your parents.

   Father_____

   Mother_____

2. Indicate the language(s), other than English, spoken in your home._____

3. Indicate what language(s), other than English, you speak fluently._____

4. Indicate the language that is most commonly spoken in your home._____

Appendix E

(Impromptu Essay Assignment)

Write an impromptu essay on the following subject:

PEOPLE IN MY NEIGHBORHOOD

This paper is to be an analysis of your observations, not a narrative or description.

MACOMB COUNTY COMMUNITY COLLEGE

Grading Criteria for Experiment Impromptu

I. ORGANIZATION

A. Did the writer provide a successful introductory paragraph?

B. Is the area of discussion reasonably divided into paragraphs in the body of the paper?

C. Is the discussion substantiated by a reasonable amount of detail?

D. Is the time unified? Does each sentence contribute to the central idea of the paragraph? Do all paragraphs of the body of the theme develop the thesis of the theme?

E. Is the theme coherent? Is an order apparent within paragraphs? Is the over-all order of the theme clear? Is the order made clear by appropriate and relevant coherence devices?

F. Does the writer provide a successful concluding paragraph?

II. IDEAS

A. Does the paper show an analytical appraisal of experience?

B. Does the writer demonstrate a maturity of ideas?

III. GRAMMAR, USAGE, MECHANICS

A. Does the writer avoid errors in sentence sense such as sentence fragments, run-on sentences, or comma splices? Is the syntax of his sentences acceptable?

B. Does the writer avoid common grammatical errors such as faulty case forms, vague or illogical pronoun references, verb form errors, tense switches, and errors in agreement?

C. Does the writer avoid errors in idiomatic expression?

D. Does the writer punctuate and capitalize properly?

E. Does the writer avoid common misspellings and homonym substitutions?

Appendix E

MACOMB COUNTY COMMUNITY COLLEGE

PROJECT ENGLISH

Impromptu Score Sheet

		1	2	3	4	5	6	7	8	9
I.	A. Introduction									
	B. Paragraphing									
	C. Supporting Detail									
	D. Unity									
	E. Coherence									
	F. Conclusion									
II.	A. Analytical Approach									
	B. Maturity of Ideas									
III.	A. Sentence Sense									
	B. Grammar (punctuation, mechanics)									
	C. Idiom									
	D. Grammar and Syntax									
	E. Spelling									

Reader:_____ Essay Number:_____

CORRELATION MATRIX FOR TOTAL GROUP - 42 VARIABLES (decimals omitted)

Academic Year 1965 - 66

VARIABLE	GPHS	ELHS	HUMHS	SOCHS	SCIHS	LANHS	VOCHS	SCVP1	SCVP2	SCQP1	SCQP2	SCTP1	SCTP2	EVP1	EVP2	ESP1	ESP2	EXP1	EXP2	SSHAP	CSRPA	CSRPB	CPWPA	CPWPB	CPFPA	CPFPB	CFBPA	CFBPB	CAPP1	CBPP2	CASP1	CBSP2	CATP1	CBTP2	ENREC	ENDEC	ENC1	ENSPC	ENC2	LIC	HUMC
AGE	09	16	04	-23	-02	03	-07	16	15	-31	23	-15	-05	22	26	-08	26	-13	18	08	17	29	25	07	-14	36	26	25	-05	25	20	29	24	01	42	13	11	03	16	25	20
GPHS		80	20	46	09	-04	-10	15	-29	-18	24	16	-30	14	-23	11	-20	-06	-01	-26	-25	-27	-31	-15	-15	24	-12	00	-12	-00	-02	01	13	11	26	03	18	08	20	04	00
ELHS			-04	31	02	14	-14	-07	17	-16	23	12	23	01	10	02	-00	14	04	-22	-08	18	-07	-13	-07	13	15	-05	02	08	01	03	02	17	30	-00	10	03	11	05	16
HUMHS				07	06	51	43	08	-04	08	08	04	-04	00	12	11	-12	00	10	15	24	40	51	19	17	26	21	10	28	29	14	20	10	19	16	21	14	17	06	08	37
SOCHS					33	18	21	-00	-20	07	12	05	-05	07	-01	00	-09	08	-01	-08	-17	04	34	20	-01	22	-07	-07	-04	-07	-18	06	-24	-04	-04	24	32	03	03	03	17
SCIHS						30	38	14	-04	25	31	25	18	02	18	18	26	08	15	01	09	10	04	01	01	07	13	-07	05	-03	-05	04	09	-01	03	32	28	23	13	10	06
LANHS							01	30	15	-01	07	13	11	19	28	17	08	11	13	36	28	19	11	02	-02	30	19	48	14	17	14	31	29	21	24	02	03	21	06	09	05
VOCHS								11	11	25	25	22	18	06	07	19	21	11	32	05	07	09	30	17	14	23	10	04	17	22	15	13	08	10	12	45	07	30	19	38	13
SCVP1									72	32	38	75	67	64	62	62	54	34	10	20	16	12	02	06	10	02	20	21	00	04	00	13	08	04	39	25	22	35	17	05	17
SCVP2										17	28	46	80	67	78	51	54	30	03	20	10	28	01	14	09	04	15	35	09	12	09	24	09	02	35	43	11	20	19	15	13
SCQP1											86	85	63	03	15	42	45	33	09	02	12	01	07	07	15	01	17	07	05	02	09	06	14	08	18	13	12	15	18	22	18
SCQP2												75	77	13	27	36	51	29	18	11	16	02	07	09	15	00	24	18	10	19	08	16	20	08	10	31	02	26	25	25	15
SCTP1													75	36	39	61	56	42	10	11	17	08	04	01	18	01	22	14	06	02	04	10	11	02	12	18	00	30	20	11	23
SCTP2														49	64	54	64	38	11	21	18	20	09	07	19	01	26	34	15	21	15	27	22	02	19	44	10	27	27	06	21
EVP1															79	40	42	51	13	17	04	16	00	26	06	06	08	17	00	14	22	20	09	23	38	21	10	19	18	14	21
EVP2																30	46	42	08	16	01	19	06	13	16	04	14	26	08	11	32	18	19	05	40	56	09	05	15	04	08
ESP1																	70	26	05	18	17	08	00	01	00	00	13	21	04	10	26	17	19	19	10	08	03	10	14	10	05
ESP2																		42	00	19	15	38	02	06	05	02	21	35	10	19	22	25	21	21	04	27	24	10	20	10	09
EXP1																			28	09	06	12	10	20	05	17	07	22	03	05	20	16	13	36	18	26	02	11	00	11	14
EXP2																				29	23	14	21	17	30	19	20	30	31	43	22	44	36	04	25	22	08	15	02	37	12
SSHAP																					63	54	38	27	20	65	33	76	29	54	20	69	38	23	07	04	09	01	20	08	01
CSRPA																						38	52	25	37	49	65	59	75	35	41	51	62	20	08	17	16	39	00	10	14
CSRPB																							50	20	14	49	44	57	21	48	23	59	33	12	17	02	16	05	11	10	22
CPWPA																								19	38	58	52	41	73	49	52	53	70	14	34	18	67	25	12	16	40
CPWPB																									27	38	01	47	23	46	36	52	32	15	13	09	01	25	18	06	10
CPFPA																										07	29	25	60	29	50	34	58	07	21	09	12	04	04	01	05
CPFPB																											29	67	17	68	38	74	50	28	04	12	16	10	08	16	18
CFBPA																												42	78	25	40	36	64	18	15	01	38	27	20	16	23
CFBPB																													29	71	46	88	50	26	02	03	18	04	14	03	09
CAPP1																														25	70	32	93	20	23	06	17	21	03	03	02
CBPP2																															59	92	62	21	14	05	14	25	09	20	13
CASP1																																80	89	27	15	04	30	22	17	03	16
CBSP2																																	87	26	05	06	15	12	03	16	14
CATP1																																		21	25	05	30	30	18	10	15
CBTP2																																			12	06	13	15	27	11	08
ENREC																																				33	14	27	30	09	05
ENDEC																																					32	15	01	13	02
ENC1																																						33	04	24	30
ENC2																																							10	44	01
LIC																																								04	28
HUM																																									13

TABLE 119

CORRELATION MATRIX FOR TOTAL GROUP - 30 VARIABLES (decimals omitted)

Academic Year 1966-67

VARIABLE	FATHE	MOTHE	OCCUP	GPHS	ELHS	HUMHS	SOCHS	SCIHS	LANHS	VOCHS	SCVP1	SCQP1	SCTP1	EVP1	ESP1	EXP1	SSHAP	CSRPA	CPWPA	CPFPA	CFBPA	CAPP1	CASP1	CATP1	ENSPC	ENC1	HUMC	SOCC	SCIC	BUSC	HEMP	CHE	HOUT	TV
AGE	03	06	05	10	09	-02	13	-03	-00	08	11	-01	06	22	-08	13	03	11	22	12	05	16	06	16	34	20	35	32	09	14	01	-37	-13	-09
FATHE		50	51	-16	-17	03	-13	-23	07	-06	-14	-03	-12	-13	-05	-09	22	28	07	14	03	22	15	20	06	13	00	-08	-01	05	-08	-03	19	-09
OCCUP				-12	-19	06	-06	-31	12	-03	-14	00	-07	-02	-10	00	16	23	14	18	10	23	16	22	-06	20	05	-09	-13	18	-13	-02	15	01
GPHS					72	40	68	60	43	44	10	-01	04	29	11	06	05	-06	14	02	01	03	07	04	33	17	06	18	24	19	04	-01	-08	02
ELHS						17	62	32	28	21	21	-02	12	35	19	14	06	-00	07	02	-06	-05	04	-03	37	42	07	27	32	21	-10	-03	03	06
HUMHS							10	-02	06	04	21	18	23	21	38	32	23	11	02	-14	-12	00	07	08	02	30	-06	10	16	-38	-15	32	19	-10
SOCHS								34	23	12	19	-07	06	43	19	05	08	-02	16	08	05	05	10	05	33	41	18	36	06	24	-01	-04	02	00
SCIHS									-02	43	10	-06	01	11	04	-09	-05	-19	-01	-02	-00	-03	-03	-07	18	-14	01	19	17	-15	16	13	-16	08
LANHS										02	28	19	-07	-19	-06	29	12	-07	13	06	-12	-04	03	-03	26	-04	16	01	16	40	18	-11	22	-05
VOCHS											-16	10	01	-07	-08	-06	-02	-20	-13	-03	-21	-04	03	-00	42	09	07	09	20	07	23	06	-10	14
SCVP1												03	66	61	50	16	07	23	-00	05	21	10	08	12	-06	31	27	29	04	00	-15	10	-04	-05
SCQP1													74	-02	20	15	13	08	-01	-07	-15	-12	-14	-12	19	09	-01	18	20	-06	-08	18	03	07
SCTP1														38	47	22	14	20	-06	-03	01	-03	-04	-01	15	32	18	34	22	04	-18	19	-05	08
EVP1															42	17	-03	18	-01	06	10	10	11	12	02	52	08	26	-05	00	-20	-02	-06	09
ESP1																33	02	14	11	-01	09	09	14	11	17	14	-00	23	-03	-11	-10	13	-03	-05
EXP1																	27	10	24	08	04	15	15	17	29	12	16	21	20	23	-02	-10	-01	-04
SSHAP																		43	42	15	22	45	32	43	35	32	26	31	33	30	-12	-08	33	-05
CSRPA																			34	14	42	61	42	55	12	32	07	21	09	-18	-18	-04	18	09
CPWPA																				36	56	68	45	63	11	-18	28	10	-02	07	05	-12	06	-24
CPFPA																					39	63	47	62	22	11	15	11	07	-01	-04	-22	-03	10
CFBPA																						74	52	71	11	16	12	12	13	20	-05	-14	03	-13
CAPP1																							69	93	15	22	14	13	10	20	-02	-21	06	-06
CASP1																								88	31	15	22	24	24	05	-06	-11	27	02
CATP1																									23	16	18	17	17	15	-04	-19	13	-02
ENSPC																										00	40	62	41	04	-01	-15	09	01
ENC1																											34	56	45	15	-14	-37	-12	21
HUMC																												34	25	17	04	05	18	-03
SOCC																													44	13	-15	12	07	00
SCIC																														31	00	10	29	12
CHE																																	31	-05

TABLE 120

CORRELATION MATRIX FOR TOTAL GROUP - 33 VARIABLES (decimals omitted)

Academic Year 1967-68

VARIABLE	FATHE	MOTHE	OCCUP	GPHS	ELHS	HUMHS	SOCHS	SCIHS	LANHS	VOCHS	ACTE1	ACTM1	ACTS1	ACTN1	ACTC1	SSHAP	CSRPA	CPWPA	CPFPA	CPBPA	CAPP1	CASP1	CATP1	ENSPC	ENC1	HUMC	SOCC	SCIC	BUSC	HEMP	CHE	HOUT	TV	DPENG
AGE	-21	-18	19	12	05	-03	05	12	08	-01	-03	-12	06	-21	-13	30	06	20	19	26	25	25	25	22	45	09	25	21	24	14	-52	-10	-00	05
FATHE		50	-44	-07	-08	06	-10	01	-11	00	-01	04	-14	-03	-04	-00	16	09	-07	-00	04	01	02	-04	-06	01	-25	-16	-34	-19	14	12	-09	-01
MOTHE			-21	-17	-15	-14	-19	-06	-12	-12	01	-08	-22	-03	-15	08	10	14	01	-00	04	09	07	-08	14	08	-22	-15	-24	-12	07	15	-05	-04
OCCUP				02	02	05	07	04	12	-06	11	-00	13	10	10	12	12	-09	05	14	04	05	03	04	-02	-03	11	15	01	06	-18	-00	-10	08
GPHS					76	63	72	68	66	59	18	11	23	04	18	32	-02	11	02	-00	03	03	04	30	52	45	40	36	34	-17	-08	03	00	30
ELHS						35	54	55	55	38	16	05	14	-03	08	24	-12	12	06	06	00	04	05	17	48	30	33	12	24	-13	-03	-03	00	26
HUMHS							37	19	33	36	05	08	25	01	17	12	13	-02	04	01	14	00	05	-13	27	46	17	08	13	00	02	04	11	16
SOCHS								40	42	34	19	15	35	13	29	22	-05	04	-04	-01	-04	-05	-05	33	28	33	46	24	51	-14	09	03	-01	27
SCIHS									49	27	13	27	18	15	25	25	-06	02	-07	-06	-04	08	03	29	28	23	30	34	15	-24	-03	08	-06	22
LANHS										24	19	-04	10	04	06	27	-13	07	02	-05	-07	-09	-06	12	12	29	36	32	17	01	-03	09	-14	19
VOCHS											03	10	05	04	09	00	-02	-05	-01	-08	-07	-07	-08	02	32	27	05	18	30	-16	00	-14	11	25
ACTE1												07	26	12	27	-02	-10	-02	-05	09	-01	-01	-02	02	13	14	16	18	03	09	-01	-00	-07	01
ACTM1													26	39	74	01	-01	-14	06	-08	-03	-07	-06	02	-38	04	20	16	14	-12	23	10	-02	02
ACTS1														43	70	11	01	-10	08	08	08	-01	04	12	25	01	38	13	-02	03	10	07	-04	07
ACTN1															78	05	02	-11	07	-02	02	-00	02	-13	-27	-17	18	18	09	-01	31	22	-03	02
ACTC1																06	-01	-17	08	-03	02	-04	-01	-00	-22	-03	34	24	15	-08	30	17	-06	06
SSHAP																	30	27	27	39	47	40	47	23	50	22	31	35	29	-06	-12	21	-14	19
CSRPA																		35	17	40	67	41	59	10	-15	-03	-02	00	-14	19	-10	17	-12	-11
CPWPA																			36	50	62	51	61	22	-07	08	10	12	09	00	-23	19	-12	-05
CPFPA																				39	60	54	61	-01	31	04	-02	08	-10	-08	-10	-00	02	02
CPBPA																					77	59	73	06	-08	-17	02	07	-18	02	-22	11	-16	-02
CAPP1																						73	93	11	-02	-10	04	13	-14	08	-22	13	14	-04
CASP1																							92	15	-14	-04	04	17	-02	05	-15	13	16	03
CATP1																								14	-05	-09	05	17	-07	07	-17	16	-16	-00
ENSPC																									00	23	54	42	42	-19	-06	00	-18	19
ENC1																										22	-02	11	93	12	-53	32	-05	00
HUMC																											32	38	44	-14	-03	12	21	27
SOCC																												48	48	-08	06	02	-04	30
SCIC																													52	-18	18	07	17	39
BUSC																														-05	27	-06	02	27
HEMP																															-26	-09	-05	-16
CHE																																20	-00	07
HOUT																																	-22	08

TABLE 121

CORRELATION MATRIX - TOTAL GROUP (decimals omitted) 29 VARIABLES

Academic Year 1968 - 69

VARI-ABLE	MOTHE	OCCUP	HEMP	TV	AGE	CHE	HOUT	ACTE1	ACTM1	ACTS1	ACTN1	ACTC1	SSHAP	CSRPA	CPWPA	CPFPA	CFBPA	CAPP1	CASP1	CATP1	GPHS	ELHS	HUMHS	SOCHS	SCIHS	LANHS	VOCHS	ENSPC	ENC1
FATHE	50	-40	-18	-11	-08	-07	01	07	-14	01	-10	-09	07	06	06	02	-00	05	-01	01	-09	-08	-04	-11	-11	-03	-02	-04	-02
MOTHE		-20	-11	-02	-02	09	02	09	-15	10	-02	-03	12	04	12	09	10	12	10	12	-08	-04	00	-08	-12	-06	-01	11	12
OCCUP			07	03	-04	-05	14	02	02	-02	09	01	-02	02	-00	-06	02	01	11	04	23	13	-01	19	19	13	15	-03	03
HEMP				-16	09	-10	04	-04	10	19	14	16	-12	03	-03	-24	01	-06	03	-04	-19	-13	-21	-14	-10	-14	-20	-09	-05
TV					-04	14	-10	-10	11	06	12	13	-22	04	-11	03	-04	-03	-13	-07	-03	01	09	04	-07	-09	01	-01	-03
AGE						-12	03	-04	-11	10	-01	-04	12	-07	07	01	15	03	09	06	10	10	04	05	04	19	01	13	31
CHE							10	12	00	-00	10	06	-07	02	-02	02	-03	-03	-08	-05	-02	-06	-06	-01	-07	-01	-01	08	-25
HOUT								-18	-12	-08	-04	-12	06	04	05	-09	05	07	15	12	03	02	07	-03	-05	-02	-04	14	-16
ACTE1									05	20	18	25	05	-04	-10	-13	-07	-09	-09	-09	14	04	13	05	16	12	-03	08	-01
ACTM1										22	40	70	-07	03	-14	-05	00	-04	-12	-08	09	-01	00	07	07	-06	15	-06	-09
ACTS1											52	72	01	01	-08	04	08	04	01	04	03	02	-15	19	06	-01	-05	25	19
ACTN1												83	-03	00	-12	-09	02	-02	-01	-02	05	-01	00	08	02	-08	03	19	-10
ACTC1													-02	01	-16	-05	05	-01	-07	-03	06	-01	-07	12	06	-09	08	17	-04
SSHAP														37	34	22	32	44	37	44	18	16	10	14	01	11	24	10	54
CSRPA															36	18	39	64	40	57	05	-00	01	05	10	04	02	-07	19
CPWPA																35	52	67	48	59	15	12	07	09	07	13	15	04	04
CPFPA																	48	62	47	60	07	03	-04	03	06	08	08	-18	12
CFBPA																		79	62	77	03	02	-00	03	03	05	06	-13	19
CAPP1																			72	92	08	06	00	08	07	08	06	-14	17
CASP1																				91	20	19	13	19	09	14	19	-17	17
CATP1																					15	14	08	13	08	13	14	-15	17
GPHS																						72	57	71	66	55	61	08	09
ELHS																							20	60	40	24	50	04	13
HUMHS																								22	26	30	10	-09	18
SOCHS																									50	20	48	01	09
SCIHS																										26	34	06	02
LANHS																											08	05	07
VOCHS																												13	17

TABLE 122

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